Contextualizing Food Systems Planning in Ciudad Juárez, Mexico: Prospects for Alternative and Transborder Coordination

Jeremy Tessier

A Thesis
in
The Department of Geography, Planning and Environment

Presented in partial fulfillment of the requirements
for the Degree of Master of Science (Geography, Urban and Environmental Studies) at
Concordia University
Montreal, Quebec, Canada

December 2020

CONCORDIA UNIVERSITY

School of Graduate Studies

This is to certify that the thesis prepared

By: Jeremy Tessier

Entitled: Food Systems Planning in Ciudad Juárez, Mexico: Prospects for Alternative and Transborder Coordination

and submitted in partial fulfillment of the requirements for the degree of

Master of Science (Geography, Planning and Environment)

complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

Signed by the final Examining Committee:

_____ Chair
Alan Nash

_____ Examiner
Ana Cordova

_____ Examiner
Satoshi Ikeda

_____ Supervisor
Norma Rantisi

Approved by _____
Craig Townsend (Chair of Department)

_____ 2020 _____
Pascale Sicotte (Dean of Faculty)

ABSTRACT

Contextualizing Food Systems Planning in Ciudad Juárez, Mexico: Prospects for Alternative and Transborder Coordination

Jeremy Tessier

The Paso Del Norte transborder region is home to one of the world's largest manufacturing complexes. Along with industrial and trade policies, agricultural and food policies have shaped economic and demographic shifts in Mexico. The policies that have created conditions favourable for the emergence of this industrial hub have also created negative effects on both sides of the US/Mexico border, markedly in Ciudad Juarez. The focus of this thesis is a historical analysis of agricultural/food systems policy in Mexico to provide in-depth context, followed by an analysis of the performance of various alternative food system planning initiatives in Juárez. Food Regime theory is deployed to describe the state's historical relationship with food system actors. Narrowing the scope from the national to the regional level, the analysis shifts to assessment of projects by stakeholders seeking to develop alternative food system initiatives. The primary objective is to gain insight as to what types of supports may be beneficial to the continued development and expansion of alternative initiatives in the context of a field of practice that is heavily intermediated by a range of other interests. Potential for collaborations between actors in other jurisdictions in the Paso Del Norte is also considered.

ACKNOWLEDGMENTS

To Norma Rantisi: Thank you for all the opportunities to learn and develop as a researcher and academic. Your patience and insights have been invaluable throughout this process. I have been extremely fortunate to have had you as a supervisor.

To Ana Cordova: Thank you for your help and council. I greatly benefitted from the resources you shared with me in Ciudad Juárez. Our discussions throughout the research process were insightful and the care you took in providing input did not go unnoticed. I hope we can find other ways to collaborate in the future.

To Teresa Cavazos, Alfredo Granados-Olivas and Daniel Delgadillo: Thank you for taking the time to share your wisdom with a novice researcher. Your passion for transforming food systems was infectious and I hope that this work may be of use in your efforts.

To Barenka Ortiz Sánchez, Fernando Rodríguez Lanuza, Adriana García Espejel, Ivonne Irais Ramírez Navarro, Juan Carlos Hernández Márquez, Rayenari Torres Chacón and Jorge Cervantes. Thank you for your friendship and the many great memories of Ciudad Juárez.

To Alexandra Suthern: Thank you for your help and support these last 2 years. When the finish line seemed far away your positive outlook kept me from despair and I am grateful to be able to share this achievement with you.

I also want to thank my parents and my brother Simon. Your unwavering support and encouragement has been a positive force underlying this process and everything leading up to it. Thank you.

Table of Contents

List of Figures

Introduction

Food is an essential good, yet it often remains out of reach for many. To borrow from Patel (2012), the world is increasingly divided between the “Stuffed and Starved”, with malnourishment and obesity existing simultaneously, a divide which can be found not only between countries but at the local level as well. In addition, Araghi (2000) describes a global crisis shifting from a “hunger amidst scarcity” to a “hunger amidst abundance”, where limitations of food production have given way to limitations of food access (p.155). After decades of internationally-coordinated market interventions, there is reason to suspect food needs cannot be managed by the market alone, and that reliance on market mechanisms may be driving inequality.

While food distribution problems may be the most apparent, other aspects along the food chain are also raising alarms. Efforts to reform food management abound, yet many are constrained by exogenous economic forces. An exploration of these forces could yield greater insight into what maneuvers may support a viable and progressive urban food agenda.

The Paso Del Norte is a region bisected by the US/Mexico border, which exerts an influence perceptible at various scales of analysis and throws into sharp relief the powerful forces affecting food systems. The Paso Del Norte was once an important agricultural region and over time Ciudad Juárez had developed prominent academic institutions and dedicated infrastructures which supported agricultural economic

development. Ciudad Juárez merits special attention as exogenous forces, both national and international, have transformed the city. The dominant economic forces that have led to the creation of one of the world's largest manufacturing complexes are linked to conditions that have tempered efforts to promote a socially just food system.

Efforts to promote food justice have seen some success in the development of sustainable food system initiatives in the Paso Del Norte, though these remain fragmented across the region and underrepresented in Ciudad Juárez. The focus of this thesis is a historical analysis of agricultural/food systems policy in Mexico to provide in-depth context, followed by an analysis of the performance of various alternative food system planning initiatives in Juárez. The primary objective is to gain insight as to what types of supports may be beneficial to the continued development and expansion of alternative initiatives. Potentials for collaborations between actors in other jurisdictions in the Paso Del Norte or other parts of Mexico are also considered in the context of a field of practice that is heavily intermediated by a range of other interests (Peck & Theodore, 2010).

To situate the reader, the literature review sets out the theory that has informed this study. A summary of developments that have shaped the conventional food system, its strategic role within the world capitalist economy and its limitations will be undertaken (McMichael, 2009). Exposing the limitations of the conventional food system will allow for the exploration of potential pathways towards more sustainable and socially just alternatives and help to consider the appropriate scale at which to approach alternative food system

planning initiatives. Then, the methodology which guides the study will be discussed, as will research questions and objectives that are derived from theory and notes from the field.

The study site is then contextualized for the reader. A historicization of the interwoven roles of agricultural and industrial policies in Mexico further clarifies the conditions through which food systems interact with the broader sociopolitical apparatus that construct the realities in the field. These policies have affected Ciudad Juárez directly. The privileging of the manufacturing sector has delivered an influx of rural migrants and a gendered division of labour that forms the backdrop to a political economy of violence which has gained global attention in recent years. These challenges affect the field of action within which alternative food system initiatives are developed.

Recent food system planning initiatives in Ciudad Juárez are then examined, as documented through fieldwork. Findings will be presented with reference to the theory set out in the literature review and the local context to explore how these initiatives respond to the limitations of—and their potential to develop networks not mediated by—the conventional food system in a region where the border arranges divergent potentialities.

Lastly, this work will conclude with an overview of the points raised and offer suggestions to expand the research on the institutional basis for alternative food system planning.

Chapter 1: Literature Review

Early proponents of food systems planning have laid a foundation for the incorporation of food systems into the realm of urban planning. Pothukuchi and Kaufman (2000) describe food systems as “the chain of activities connecting food production, processing, distribution, consumption, and waste management, as well as all the associated regulatory institutions and activities” (p.113). Simply put, food management is a complex system, connected to many others, and it affects and is affected by processes at scales ranging from the local to the global. With that in mind, political economy and political ecology frameworks are deployed to investigate relationships between economic processes, political policies, social institutions, and environmental realities as they pertain to how existing food systems operate in the Paso Del Norte region and beyond, and the impact these systems create on the communities in the transborder region.

The Global Food System

Food systems are dynamic assemblages of actors; infrastructures, institutions, people, and policies operating with sometimes conflicting agendas and at different scales (Born & Purcell, 2006; Campbell, 2004). While the complexity of these systems makes generalizations difficult, the literature widely defines two subcategories of food systems: the Conventional Food System and the Alternative Food System. In very broad terms, the

Conventional Food System values food as a market good, operationalized within a system of industrial agriculture, and circulated through free-trade policies with global reach. As a counter-movement, Alternative Food Systems seek to embed agriculture and food into community-based, agro-ecological practices in response to the market's fundamental inability to sustainably organize food systems. The dualistic contrast between practices and institutions can exaggerate and "overly dichotomise" these agri-food systems (Scrinis, 2007, p.113). In this conceptual depiction, the respective systems do not exist in a binary, with both existing simultaneously within a global food system. This embeddedness exposes complementarities and tensions within and between the two systems (Campbell, 2004). Nevertheless, an analysis of these food systems and their relationship with larger systems of production and consumption requires that defining features of both conventional and alternative food systems be clarified. To contextualize the issue, a historical overview of the global food system and its local impacts is necessary.

Drawing on world-systems theory and regulation theory, Friedman and McMichael (1989) lay out a history of how agriculture impacted uneven development and contributed to an ordering of the transnational division of labour. This framework, Food Regime Theory, sets about explaining "the strategic role of agriculture and food in the construction of the world capitalist economy" (McMichael, 2009, p.139). It does this by deploying the regulationist theory of capitalist regimes of accumulation, which define distinct time periods with particular institutional frameworks that facilitate the process of accumulation (e.g., the Fordist system of mass production coupled with the welfare state from the 1940s

to the 1970s). Peck and Tickell (1992) have articulated accumulation systems as a relationship of production and consumption that assuages capitalist investment concerns by developing procedures, “habits, customs, social norms and enforceable laws” to ensure integration of individuals within the system of capitalist reproduction (p.192). This theory is then transposed onto an examination of global food relations (Atkins & Bowler, 2001). The result was Friedman and McMichael’s (1989) highly influential work on agriculture and the state system, which has been an important building block for the analysis of food systems.

Food Regime Theory examines the politics of food in periods of stability and transition in the longue durée of capital accumulation (McMichael, 2009). Just as regulationist theory recognizes the temporal limitations of regimes of accumulation, most notably in the shift from Fordist mass production to post-Fordist flexible production regimes, so too does Food Regime Theory consider shifting realities of the existing food system as new assemblages of actors with contradictory relations emerge over time, requiring a retooling of the procedures that facilitate accumulation. In this way, Food Regime Theory is a form of historical method, capable of moving beyond the state system’s relationship with international food circuits, to explore existing processes that shape food systems in the context of a potentially emerging regime of accumulation (McMichael, 2013).

What we refer to today as the Conventional Food System has emerged from a legacy of important global power dynamics. The first food regime, the Colonial-Diasporic Food Regime (1870s-1930s), was an era of colonial exploitation of meat and wheat in the

temperate settler colonies and of sugar, coffee, cocoa, etc., in tropical exploitation colonies (Friedmann, 2009). These served as a cheap input for the social reproduction that workers required to fuel the labour force of industrial Europe, themselves displaced by the foreclosing of the commons (McMichael, 2009). Imposed monocultural practices and international demand for agricultural exports modelled an agricultural economic development trajectory in the colonies. In exchange for agricultural goods, the colonies imported “European manufactured goods, labour, and capital”, which would be used to construct railways and ports (Friedmann & McMichael, 1989, p.96).

The westward expansion of colonialism in North America relied on infrastructures that resulted in “funnel-shaped” commodity chains, directing flows towards international markets (Dahlberg, 2001). Settler colonies of the United States, Canada, and Australia particularly, modelled their development as an “articulated dynamic between national agricultural and industrial sectors”, by foreclosing the commons, displacing indigenous peoples, and profiting from the cheap ecologies of fertile lands. Emulating extractive colonialist practices within their territory would set the stage for the second food regime (McMichael, 2009, p.141). From Friedmann and McMichael:

> “Whereas the colonial movement re-divided the world economy into vertical power blocs, subordinating agricultural hinterland to industrial metropole, the national counter-movement reformulated the relation between sectors as internal to each national economy” (1989, p.98).

The second food regime (1950s-1970s) emerged after a period of uncertainty brought about by the Great Wars, the Great Depression, and the Dust Bowl. The emergence of a new global power in the post-war period set in motion a reorganization of global power dynamics. Friedmann (2009) has dubbed this “The Mercantile-Industrial Food Regime”, as national agricultural policies were used to leverage economic advantage. European and Settler states (First World) set about erecting protectionist policies to shelter their national agricultural markets while exporting surpluses to the recently autonomous postcolonial states (Third World), with Soviet-allied states remaining isolated from international trade (Second World). In the post-war era, the United States emerged as the most capable of taking advantage of this food regime.

New Deal-era farm subsidies were now producing large surpluses in the United States. Direct subsidy of farm incomes was replaced with price supports, which encouraged further overproduction (Bernstein, 2016). Domestic food prices were first stabilized by exporting surpluses as food aid to Europe under the Marshall Aid, and then, through the Food for Peace initiative under Public Law 480, to certain colonial states (Friedmann, 1982). This was used in the context of the Cold War to strategically assist the industrialization of certain Third World countries by using cheap grain imports as a form of wage subsidy for the new proletariats to accelerate industrialization (McMichael, 2009). Even when not dumped as food aid, the large influx lowered global wheat prices and disincentivized autonomous national production, further stimulating the expansion of foreign trade of United States agricultural commodities. Third World workers were displaced from their land by the economic pressures of cheap food imports from North

America—and later Europe—a process that dismantled much peasant agricultural production (Friedmann, 2009).

The second food regime overlaps with the advent of the Green Revolution. From this period until the mid-2000s, staple crop yields increased dramatically. The Green Revolution involved technology transfers to developing nations which encouraged mechanization, use of chemical fertilizers and irrigation, along with new seed varieties. The policies which guided these technology transfers benefitted those best positioned to replicate profitable industrial agriculture practices. Wealthy landowners were able to invest in Green Revolution technologies, while peasant farmers were not well-positioned to make the transition. The labour-displacing technology of the Green Revolution, while increasing yields of staple crops, also resulted in the bifurcation of class, pushing many towards urban areas in search of work as peasant agriculture faced diminishing economic viability. In this way, industrial agriculture—whether of foreign or domestic production—tends to be labour-displacing.

Not only did the Green Revolution provide technology transfers, by the end of the 1960s it reshaped global economic relations. For the Third World states, emulating monoculture specialization of western industrial food systems led to higher yields at the expense of local knowledge loss, ecosystem degradation, a concentration of market actors, and the “penetration of international capital into previously self-sufficient agrarian societies” (Friedmann, 1982, p.251). This shift resulted in the changing of local diets, where it is estimated that 75% of the world's agricultural crop diversity was lost due to agriculture

specialization, with nine crops accounting for more than 75% of global plant-based dietary energy sources (Sundkvist et al., 2005 citing FAO, 1993).

Just as the first food regime was predicated on the European export of monoculture practices, the second food regime similarly brought about an economic ordering and path-dependency to postcolonial states. The US-centric regime exported a national development model that relied on agriculture as a sector structured to operate as a “source of demand for domestic industry” (Friedmann & McMichael, 1989, p.111). By adopting industrial practices there would be co-development of national agriculture and industry, rather than a sector that simply supplied growing urban centres with food and labour. However, under the Mercantilist-Industrial Food Regime, former settler colonies and Europe had developed a model of agriculture that depended on external markets. These tensions would inhibit the transferability of the development model. Where it was posited that “agriculture and industry would articulate in a virtuous cycle of technologically-based growth, [this model] stood in contradiction to the construction of transnational commodity chains linking specialized agricultural sectors in different world sites" (McMichael, 2009, p.146).

Developing countries were not able to harness the dynamic exchanges between the agriculture and manufacturing sectors to the same extent as the First World, as they were forced to compete with cheap grain imports from the United States, other settler colonies, and later Europe. This resulted in the displacement and commodification of traditional foods in favour of foods that would serve as production inputs within global commodity chains, e.g., soy and corn (Friedmann & McMichael, 1989). From this we see the

beginnings of the current conventional food system, as food production becomes increasingly specialized by region and complex commodity chains are developed.

Nonetheless, during this period Third World countries began a process of differentiation, where some were successful exporters of manufactured goods. The American development model of dynamic exchanges between agriculture and manufacturing, when it was successfully integrated, resulted in the “subordination of crops and livestock into corporate, often transnational, agrofood complexes”, which was important for the successful development of export agriculture in newly agricultural countries, similar to the post-Fordist transnational restructuring of manufacturing production (associated with outsourcing from Global North), which produced newly industrial economies (Friedmann, 1993, p.45).

According to Friedmann (2005), the Industrial-Mercantile food regime came to an end in the early seventies. As the regime matured, its inherent tensions manifested. Chronic surpluses and protectionist policies in the First World grew cumbersome, so that “the transnational corporations outgrew the national regulatory frameworks in which they were born, and found them to be obstacles to further integration of a potentially global agro-food sector” (Friedmann, 1993, p.39). Bernstein (2016) describes how the freedom of (Industrial) capital generated a crisis due to the restriction of (Mercantile) trade. This fragility and a surge in oil prices (linked to agricultural commodity prices) would combine with the opening of the Soviet-bloc to grain trade to undermine the then-existing regime (Friedmann, 1993).

In the subsequent decades, the Atlantic-centred agricultural complex began losing its prominence, while transnational firms continued to grow and diversify commodity chains. This created interdependence between national economies to the point of eventually circumventing national regulations, as was the case of the failed United States embargo on Soviet grain imports in 1975 (Friedmann, 1993). This shift in the balance of power from the state to the transnational corporation coincides with the transition from Fordist to post-Fordist systems of production, with an increasingly diversified global sourcing of inputs to industrial food production. This marks a shift in patterns of capital accumulation, with the weakening of the Keynesian welfare state and the emergence of neoliberal globalization, characterized by privatization, deregulation and corporate monopoly (Holt-Gimenez, 2011).

Thus, it has been theorized that a transition towards a Third Food Regime would be based on unfettered market rule, with intergovernmental organizations acting as important institutional support mechanisms to establish the procedures that would dictate a new regime of accumulation (Pritchard, 2009). However, the multilateral GATT (General Agreement on Tariffs and Trade), later replaced by the WTO (World Trade Organization), was unsuccessful in negotiating coherent procedures that could coalesce into a proper global regime of accumulation. By 2003, Friedmann (2005) concludes that the WTO's Agreement on Agriculture had caused multilateral negotiations to collapse, as countries of the Global South took issue with both the lack of movement from Global North countries, especially the United States and countries belonging to the EU, to reduce their

farm and export subsidies and the pitting of corporate interests against grassroots food sovereignty movements. Indeed, Pritchard (2009) notes that WTO agricultural reforms would represent a “maximum, highly disputable, gain of 0.5% of world economic activity”, yet the impasse caused by these proposed reforms resulted in bringing the whole negotiation process to a halt, leaving states to resort to bilateral agreements (p.298).

The lack of consensus highlights the degree of influence held by transnational agrifood corporations. If a “Third Regime” has not manifested in the sense of a new regime of accumulation with accompanying institutional parameters, what has emerged is a system of relationships driven by powerful market actors. While bilateral agreements indicate that states remain key actors, Holt-Gimenez (2011) notes that the transnational corporations are now powerful enough to “dominate the governments and the multilateral organizations that make and enforce the regime’s rules for trade, labor, property and technology”, and thus influence the regulatory structures that ensure integration into the regime of accumulation (p.2).

The advances of corporate control have expanded to such a point that there is now reason to refer to the emergence of a Corporate Food Regime (McMichael, 2005). States of the Global North and multilateral organizations have used their regulatory responsibilities in the service of the market, in a drive towards deregulation or even in the push for *neo-regulation,* as is the case for the intellectual property of biotechnology identified by Pechlaner and Otero (2008). These policy prescriptions align with the market-centred ideology of neoliberal globalism, giving rise to an oscillation between periods of intense

privatization and, following crisis, periods of reform intended to perpetuate the existing accumulation regime (Holt-Gimenez, 2011).

The deepening integration of nations into a global industrial food system is leading to food insecurity and crisis. Peter Rosset (2008) cites “three decades of neo-liberal budget-cutting, privatization and free trade agreements” as the long-term culprits of the 2007-2008 food crisis (p.461). The climate crisis is also being exacerbated, as the globally networked food system is a major source of greenhouse gas emissions. Fertilizer and pesticide manufacturing, transportation and refrigeration account for most of agriculture emissions, while land pressures causing deforestation reduce the capacity to sequester carbon (Tubiello et al., 2014; Loboguerrero et al., 2019).

The distancing of national governments away from the regulatory and support roles that once shaped our relationships with food and agriculture has given rise to market innovations and resource exploitation at an unparalleled scale. The result has been a system where food is increasingly conceived of in its commodity form, and less as an essential good. Food has become subject to volatile markets, which in turn has led to crisis and political instability while further degrading the fragile ecologies on which food production relies. Moreover, responses to such structural limitations have taken the form of short-sighted technological and financial innovations that seek to expand the role of corporations in the food system.

The Corporate Food Regime

The following section provides a detailed overview of the principal aspects of the currently existing corporate food regime in which contemporary alternative food system initiatives are situated. This will serve as a foundation for explorations of the limitations and possibilities of agrifood initiatives in the context of the Paso Del Norte.

By deploying technological and financial innovations, corporations are consolidating ownership and control and forming linkages between manufacturing, energy, finance, and agricultural sectors to create new financial value from foods. These values do not address the underlying disharmonies between the market, the environment, and society, but instead, focus on overcoming natural processes that do not align with the short-term economic goals of corporate agrifood actors.

From a technological perspective, the Corporate Food Regime has shifted from the post-WWII, Green Revolution *chemical-industrial* paradigm to a *genetic-corporate* paradigm (Scrinis, 2007). Breeding programs are shifting from public to privately funded sources and the research outcomes have tended to be geared towards cost-saving innovations, in the context of industrial production operations. The most notable and contested of these, the inception of Genetically Modified Organisms (GMOs) in farming practices, is the result of research aimed at creating patented genetic variations that would not occur in nature, and rely on the use of biotechnology. The rationale for these innovations is the continuous need for increased food production due to the pressures from projected global

population growth, a decrease of arable land, and the need for improved nutritional standards, especially in less developed nations. The current global rate of increase in crop yield is less than 1.7%, which would need to increase to 2.4% to meet the aforementioned challenges (Zhang et al., 2016). These issues are compounded by a looming climate disaster. Agriculture accounts for between 19-29% of total global greenhouse gas emissions, with the conventional agriculture model accounting for most of those emissions (Loboguerrero et al., 2019).

GMO crops have proven to significantly increase yields in industrial agriculture production systems. However, many concerns remain, including reduced nutritional quality due to target fertilizer use to increase size, colour, and durability at the expense of nutritional value. It has been noted that the nutritional quality of any one crop could be mitigated by the crop diversity that was once commonplace.

Many issues such as crop contamination, loss of genetic diversity, increased pesticide use and health risks demonstrate that GMOs are not a panacea for the structural problems within the conventional food system. The effects of climate change are also driving GMO research to produce varieties that can withstand disruptions in weather patterns.

In Mexico, where maize is central to culture, concerns about GMO crop contamination and preserving genetic heritage have pitted rural indigenous peoples against the technocratic projects of the state (Canby, 2010). Mexico maintains, and is central to the genetic diversity of maize species. These species are being appropriated and patented,

sold to United States farmers who then export genetically modified maize into Mexico, endangering a source of genetic wealth and foreclosing on the culture and livelihoods of millions of people in rural Mexico. Perhaps the most egregious of these developments is a strain of maize specifically for biofuel production, while an estimated 750 million people in developing regions remain undernourished (FAO, 2016).

The expansion of biofuels has been particularly important in their impact on the global food system. Biofuel production has created “new linkages, trade-offs, and competition between agricultural and energy sectors” (Von Braun, 2009, p.10). The drive in the United States and EU towards converting crops to biofuels would allow for the support and subsidies of producers of local fuel production, while not specifically contravening WTO’s goal of reducing farm subsidies (Chand, 2008). Consequently, as energy and agriculture are increasingly correlated, volatile energy prices have affected food-price fluctuations, which can be extremely damaging to the world’s poorest people (Von Braun, 2009). The expansion of biofuel production is regarded as a catalyst for the 2007-2008 food crisis, as diminishing supply of grains as foodstuff caused prices to spike (Conceição & Mendoza, 2009).

Linkages between the manufacturing and agriculture sectors are expanding into new frontiers of production. Upstream inputs such as genetically-modified seeds, fertilizers, pesticides, and antibiotics are combined with downstream outputs such as maize and soy, themselves used as inputs for processed foods, animal feed, fuel, cosmetics, stabilizers, etc. (McMichael, 2013). These innovations have produced hundreds of

thousands of products that are durable and easily stored and transported, and less prone to the spoilage typical of fresh produce. A boon to transnational food corporations and the operations of global commodity chains, these products become increasingly untethered from the natural processes that previously created monopoly rents for local producers by virtue of the geographical limits of transport.

Financialization is another key driver of the Corporate Food Regime. The abstraction of food into a financial asset has created opportunities for the accumulation of wealth by transnational food corporations, and with the advent of complex financial innovations (e.g., futures trading, derivatives), has attracted new actors far removed from the agriculture sector (McMichael, 2012). Clapp (2014), notes that financialization creates *distance*, which is here defined as "the geographical expanse from farm to plate along global commodity chains, as well as knowledge gaps about the social and environmental impacts of food production", which raises, among other things, concerns about accountability and the governance structure of the food system (p.798), not to mention the weakening of feedback loops within the food system (Sundkvist, 2005). Further, Moore (2010) asserts that financialization encourages "land grabs" and "speculative activities [producing] unprecedented volatility in commodity markets", and discourages productive investment (p.226). The outcome is a process that is both expansionary and extractive, producing *distance.*

The conventional system is expansionary and extractive in other aspects as well. Food regimes have been structured around "cheap ecology", where the exploitation of natural

resources is an integral part of the system's functioning (Araghi, 2010). Capitalist rationalization and international trade theory promote the specialization of labour, capital, technology, and ecosystems, in order to increase economic efficiencies. The drive for specialization has resulted in fragmented agro-ecosystems that are severely reduced in the variety of ecosystem services they perform (Sundkvist, 2007 citing Gale, 2000). The end of cheap ecology is forcing this system to adapt, but adaptations that ignore ecosystem dynamics are contributing to the breakdown of ecosystem functions. For example, large monocultures and livestock operations are creating deficits of manure fertilizers in the case of the former and overloads in the case of the latter. This disruption of natural cycles is illustrative of the material aspect of what Marx defines as the "metabolic rift".

The metabolic rift refers to both a material rupture in nutrient cycling, as well as a social rupture in the "metabolic relation between humans and nature under capitalism" (Schneider & McMichael, 2010, p.462). As foods travel from rural to urban environments, byproducts are perceived as waste instead of an input to replenish soil fertility at the point of production. This then produces a need for new sources of soil nutrients, provoking the expansion of capitalist systems seeking to solve a nutrient crisis which leads to the "geographic displacement" of ecological crises, where resources are manufactured or mined only to be wasted at the point of consumption (McClintock, 2010, p.3). Thus, the geographic distance created by the drive towards specialization has real material effects on the sustainable productivity of food systems. While transportation technology innovations have created interconnectivity they have also caused a drive towards

ecosystem fragmentation, and, in the North American context, prompting the use of migrant farmworkers, often moving from one large monoculture to the next, with little access to workplace protections or health services. Due to this increasing interconnectivity of the global food system, localized crises are reflected in volatile global food prices, which unevenly impact the communities least able to absorb increased food costs in their household budgets.

The social aspect of the metabolic rift is brought about by the commodification of land and labour, and also food. As the pressures resulting from conventional agrifood systems result in proletarianization and migration, relationships between communities and natural processes are fractured. The social relations between production, distribution, preparation and consumption have been unravelled to create new commodity-driven relations of production and consumption, where food becomes a simple commodity following market logic. Finally, the broader social rift also produces an individual rift; feelings of alienation from both the product of our labour and to nature, that come about as the self is perceived as external to the environment (McClintock, 2010).

Beyond these existential concerns, food-related public health crises and growing environmental concerns have made headlines. Disease outbreaks, GMO crop contamination, river eutrophication, renaming and mislabeling seafood, etc., have caused consumer confidence in the conventional food system to decline. Additionally, an obesity epidemic has raised nutritional concerns, inviting a shift of attention towards the quality of the food offerings in communities (Scrinis, 2007). Indeed, Murdoch et al. (2000) identify

food safety and nutrition concerns as harbingers of a “qualitative shift” in the contemporary food system, with many moving towards more cautious consumption habits (p.107). While some alternative food networks have found success in this new paradigm, e.g., by distinguishing their ecological or regional qualities (Marsden, 2018), there have also been attempts to “co-opt and reincorporate” them back into the conventional food system (Scrinis, 2007, p.113).

The Cooptation of “Alternatives” under the Corporate Food Regime

Under the Corporate Food Regime, food management issues are largely left to the market to organize. Guthman’s (2007) work on the fair trade movement explores the emergence of a market-led project of equitable consumerism. Fair Trade organizations have been developed as a form of private food governance, seeking to instrumentalize people as economic agents, whereby “they ‘devolve’ regulatory responsibility to consumers” (Guthman, 2007, p.457) in what can be viewed as a ‘neoliberalization of food activism’ (Roff, 2007). They do this by seeking to diminish social distance, while geographical distance remains a necessary feature of the conventional food system. Fair Trade organizations essentially reduce distance by ensuring that social and environmental concerns are measured in the price set by the producers, commanding a premium for this service. This serves as “a defense from the devalorization processes associated with conventional production systems and ‘globalization’ ” (Guthman, 2007, p.459).

A parallel process can be seen in the organic food sector. The organics movement originated as a response to conventional agrifood, stressing the importance of community engagement, small-scale production and environmental stewardship (Johnston et al., 2009). Today, organic agrifood systems meet some of the nutritional and ecological objectives that fit alternative agrifood models, however, costs and risks of organic production privilege medium and large firms, thus "challenging the assumption that it is small farms that benefit from the growing organic market" (Raynolds, 2000, p.302). Regulations and institutions favour large scale production and distribution, offering an advantageous position to larger actors, so that the majority of operations are controlled by large, vertically- and horizontally-integrated firms using conventional methods, a phenomenon referred to as "corporate organics" (Johnston et al., 2009). These firms exploit the ideals of the original organics movement, positioning organic foods as a profitable niche-market consumer good[1].

The distinction between food as an essential good and food as a commodity, or consumer good, is important to understanding issues arising from a market-led approach to food system management. While fair trade and organic foods do produce better environmental and nutritional outcomes than conventional industrial and manufactured foods, they remain expensive niche products, posing issues for food access to many.

[1] Additionally, Guthman (2004) details a process of "stealth ownership", whereby transnational agrifood corporations seek to hide their affiliation to certain products as the parent company is not advertised on the product label, to benefit from localized value capture, through their appearance as small-scale or artisanal products.

As states devolve food management responsibilities to transnational corporations and individual consumers, they allow extractives practices to persist, actuated by uneven global power dynamics, and limit potential courses of action to technological and consumer-based approaches. However, Murdoch et al. (2000) posit that globalization is a "contested process", where the conventional food system conditions rather than determines the actions of local producers and consumers, as global processes are mediated by local specificities, presenting a potential point of entry for the development of alternative food systems (p.110).

From (food regime) theory to (food system) planning

The concerns of agriculture and food that were once the purview of national policymakers are now also being addressed from below. Many cities around the world have begun to put food issues on the policy agenda (Marsden & Sonnino, 2012). There has been increasing recognition of the important role food systems[2] play in the realities in both urban and rural areas. In the wake of state retrenchment, and faced with increased corporate control, agrifood initiatives have been taken up by local actors responding to needs arising in their communities.

[2] Food systems are dynamic assemblages of actors; infrastructures, institutions, people and policies operating with sometimes conflicting agendas and at different scales (Campbell, 2004). Food *regimes* by contrast refer to specific "habits, customs, social norms and enforceable laws" to ensure integration of individuals within the system of capitalist reproduction" (Peck and Tickell, 1992,p.192).

McClintock (2014) notes there has been a “roll-out of nonprofits to fill in the gaps left by the rolling back of the social safety net” in the context of neoliberal reforms (p.149). According to Peck and Tickell (2002), the market-centric neoliberal agenda has sought to ‘roll-back’ Keynesian-welfarist and social-collectivist institutions, to then ‘roll-out’ a project of “construction and consolidation of neoliberalized state forms, modes of governance, and regulatory relations” (p.241).

As a case in point, Rosenberg and Cohen (2018) have traced a history of political actions in the United States and the United Kingdom to address food insecurity through greater access that has tended to enact market-led approaches. With a growing interest in addressing food deserts, areas with little access to nutritious foods, initiatives for greater geographical access to supermarkets were developed (Pothukuchi, 2005). These fell short of addressing the economic barriers to the market’s offerings and achieved little to improve nutritional outcomes, as *access* in this sense does not guarantee availability (Rosenberg & Cohen, 2018). Similarly, Allen (2010) has noted that “consumer-based local food efforts are difficult to extricate from the dominant political economy and therefore may inadvertently reproduce extant social privileges” (p.305), and thus perpetuate unequal availability of food.

The issue of economic barriers to accessing market goods is fundamental to understanding the limitations of the conventional food system. Food security initiatives, as stop-gap or emergency measures, operate within and legitimize the conventional food system; efforts to reduce systematic economic disparities are often not addressed. In this

context, food security[3] initiatives see nonprofits or civil society groups operating within the market approach to food management by expanding access to emergency food sources, e.g., efforts to lobby grocery stores to donate near-expired goods to operate soup kitchens. Thus, a distinction must be made between initiatives that address the causes of food insecurity, whether economic or geographic, and those that maintain the status quo.

As a rebuke to this approach, the Food Sovereignty movement proposes a more radical approach. This movement has articulated a vision for a sustainable food system that precludes using extractive methods, subsidies, and trade agreements to access and dominate foreign markets—the modus operandi of the convention food system.

Food Sovereignty

Usage of the term food sovereignty can first be traced to Mexico, where *soberania alimentaria* was used in documents of the Programa Nacional de Alimentación (Grey & Patel, 2015) and referred to a national policy aimed at reducing imports of staple foods by supporting domestic producers. The term garnered criticism and has since evolved. A contemporary definition by La Via Campesina, adopted in Tlaxcala, Mexico in 1996 has gained wide acceptance (Edelman, 2014). According to Via Campesina (2013):

[3] Food security initiatives, in the form of emergency food access, differs from food security as a state of being, defined as a state where all people at all times have physical and economic access to adequate amounts of nutritious and safe food to maintain a healthy and active life.

> “Food Sovereignty is the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems."

In the context of indigenous resurgence, Grey and Patel (2015) assert that food sovereignty is the “continuation of anti-colonial struggles in ostensibly postcolonial contexts”, as struggles for self-determination and autonomy are linked to food system planning initiatives in indigenous communities. It can also be framed as a project of dismantling the legacy of the Colonial-Diasporic Food Regime, by reorienting food systems away from extractive systems embedded in world markets to instead sustainably respond to local demand. The contrast between food sovereignty as a national program of self-sufficiency and food sovereignty as a movement to decolonize peoples within countries composed of settler and indigenous groups raises questions of territorial jurisdiction. National policies have largely aligned with the vestiges of colonial structures that today manifest as the Corporate Food System and do not operate at a scale that has the legitimacy to articulate what is culturally, economically, or ecologically appropriate in a post-colonial heterogeneous society. What then follows is a need for greater food system localization.

Allen (2010) remarks that the growing interest in agrifood system localization is a response to “the destructive, disempowering and alienating effects of large-scale political economic forces” (p.296). The neoliberal “rollback” of services, or “rollout” of new regulatory relations implies a shrinking of the territorial and relational fields of action

available to individuals and communities who can be limited by their distance to decision-makers. Allen et al. (2003) have found that people engage in agrifood initiatives at the local level because results are measurable in time and space, and they are able to gain support, where avenues for change at other scales seem foreclosed. Similarly, Feagan (2007) cites Anderson and Cook (2000) to describe how relationships of power and knowledge are distorted by distance in the food supply system and how local food systems can reduce these distortions. In this context, the expansion of local interest in food issues is to be expected. Scholars have followed these developments and "resistance to the agro-food distanciation" has become an important feature within discussions of localization and regionalization of food systems (Winter, 2003, p.508).

The structure of the conventional food system has tended to consolidate power among a small number of actors. An element inherent in this structure is the growth of geographic and social distance between the powerful and their sphere of influence, which results in ecosystem degradation and a siphoning of wealth away from communities. Localization efforts seeking to reduce geographic distance can help reorder food systems to deliver more sustainable outcomes. Proximity and decentralization can lead to tighter feedback loops between actors along the food chain, enabling better crisis aversion and management to respond to environmental concerns, disease outbreaks (Sundkvist et al., 2005) or to culturally appropriate local demand (Donald & Blay-Palmer, 2006). Localization initiatives can also be deployed to reduce social distance by involving local stakeholders in decision-making and promoting greater local control of the food system.

Some localization efforts have also been met with criticism. Born and Purcell (2005) warn that localization should not be a priori designated as beneficial. Rather, outcomes of ecosystem health and community prosperity should be sought by whichever means can best produce the desired results, at whichever scale is most suitable. In terms of agricultural production, this would preclude certain bioregions from seeking autonomy if they lack the natural resources to do so sustainably. Favouring localization strategies can also prop up local oligopolies, thus eliminating geographic distance but maintaining extractive structures that create social distance. As the case of Fair Trade networks illustrates, social distance can be reduced while maintaining geographic distance. Therefore, localization or regionalization cannot be the end goal but rather a means, among others, to reduce environmental degradation and increase agency within marginalized communities.

Food system planning is well-positioned to navigate these complexities. Projects to reform the food system through urban planning initiatives have been recognized by many scholars and organizations as a legitimate means for improving living standards in urban areas (Brinkley, 2013). As various elements of food systems are integrated with other aspects within the purview of planners, food system planning offers opportunities to advance a more integrated practice. Historically, the field of urban planning has failed to appreciate the interconnectedness of urban processes and tended to compartmentalize them, but this may be changing (Pothukuchi and Kaufman, 2000). In 2007, the American Planning Association adopted a policy guide that outlines their commitment to engage with this potential for integration:

> “Planners support the creation of local and regional food planning mechanisms that integrate major local planning functions (such as land use, economic development, transportation, environment, parks and recreation, public safety, health and human services, and agricultural preservation)” (American Planning Association, 2007).

Food systems, as well as the policies and actions taken to change or conserve them, are both territorially bounded and relational. Bound by specific bioregions, infrastructures, and place-based regulations, they appear to be contained and enduring. Yet food systems are also relational, operating at an array of spatial scales that are defined by their economic and social networks, and thus are inherently provisional. The current conventional system and its scalar arrangements embody a strong inertia. Incubating locally-oriented institutions and networks, creating alternative infrastructures or reappropriating existing, externally-oriented infrastructures presents opportunities for a renegotiation of related networks to foster alternative development paths.

To that end, Food Policy Councils (FPCs) are emerging as a means to activate networks, mobilize resources, and move a progressive agenda forward. These organizations have proliferated in North America in recent years (see Figure 1). As place-based, typically locally- or regionally-oriented organizations, FPCs are modelled as community-based networks with the goal of educating their respective communities, and engaging with

interested actors and policy-makers to promote, support, and coordinate alternative food system initiatives.

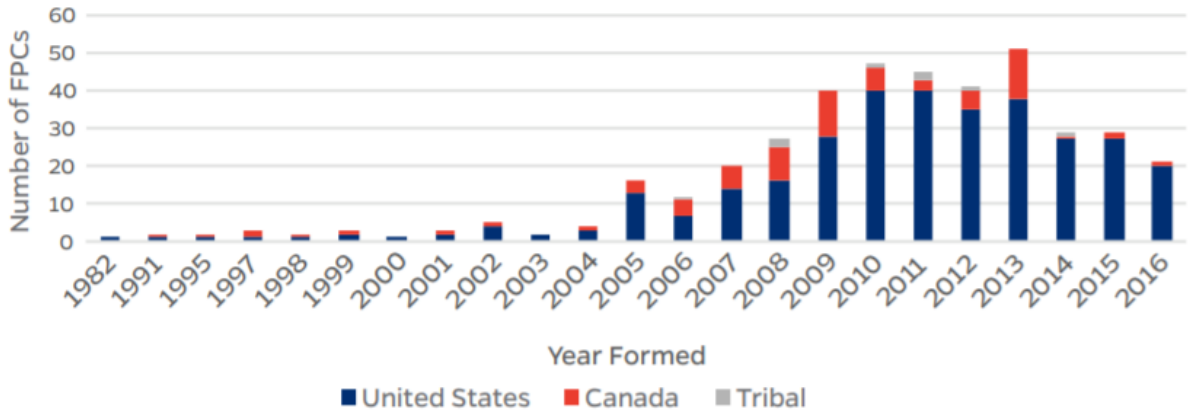

Figure 1. Number of Food Policy Councils in the United States and Canada

Source: Sussman & Bassarab, 2017.

Feenstra (1997) describes FPCs as a prevention-oriented framework to empower community members, develop economic support strategies, and foster more direct relationships between producers and consumers. However, FPCs can vary widely in their mandates and missions as these are typically reflective of the realities of their respective communities. Schiff (2008) notes that in some instances, policy writing does not always play an important role, and so the label of Food Policy Council can be a misnomer and here serves as an umbrella term for any food system-oriented community action groups.

Given the particular assemblage of stakeholders within a locality, FPCs develop various strategies to achieve their goals[4]. In her study, Schiff (2008) notes that FPCs may or may

[4] Dalhberg's (1994) comparative study of various American FPCs found that those focusing on long term food system reform were more successful than those focused on immediately relieving food insecurity. An

not seek formal institutional recognition. Some may propose policy at their inception and move towards seeking recognition or integration by local governing bodies to secure funding to bring projects forward. Others may seek a more informal status, at arm's length of governing bodies, for fear of compromising their autonomy or be pressured to conform to pre-existing directives, which may hamper or distract from the implementation of projects. There are multiple paths towards action which can assume either formal and informal modes. Fundamentally, success or failure depends on the particular assemblage of actors[5] and the networks in which these actors are embedded.

Thus, food system planning, while largely locally-oriented, is also emerging as a force at larger scales. As evidenced by the Milan Urban Food Policy Pact, The USA and UK food policy federations, Via Campesina, Food Secure Canada, etc., these networks provide many benefits, such as knowledge and resource sharing. However, faced with limited ability to affect pressure from the exogenous forces that affect local autonomy, these entities are also positioning themselves to promote food planning at a national scale.

But the structure and organization of such councils are key to their effectiveness, and here the concept of 'embedded autonomy' has some relevance. Peter Evans (1995) introduces this concept in his analysis of the state's role in economic transformation, performed to various degrees of success by state bureaucracies in countries. Evans'

emphasis on hunger "negatively affects the longer-term success of a FPC" as it reinforces approaches that tend to create a system of dependency rather than one of empowerment (p.10). Dahlberg finds that relieving hunger instead of addressing sources of hunger reduces pressure to make urban systems more equitable and sustainable.

[5] Actors in the sense of infrastructure, institutions, people and policies operating with sometimes conflicting agendas and at different scales.

findings suggest that specialized bureaucrats who have some autonomy from the state but are also attuned to community needs and interests ('embedded') can provide "sources of intelligence and channels of implementation" and foster a competent and benevolent state structure (p.248). Parallels can be made with this case study, as different institutional foundations shape food system planning projects and the necessary state interventions differently. Indeed, the varied manifestation of 'planning' across different geographic settings is also described in the policy transfer and mobility literature, which highlights the relational and territorially bounded nature of policy (McCann & Ward, 2012; Peck & Theodore, 2010) and the need to be sensitive to specific historical and regulatory contexts.

Given the economic integration, strong relational ties, and limitations of territorially-bounded institutions, there would appear to be critical foundations for a regionally-oriented approach to food sovereignty for Ciudad Juárez and the Paso Del Norte, more generally. Such an approach would involve an assemblage of food policy actors in the region to address both local and regional issues as well as powerful exogenous forces that affect the regional economy and its concomitant social and environmental concerns. A closer analysis of the basis for this approach follows in the subsequent chapters after the methodology for the analysis is reviewed in Chapter 3.

Chapter 2. Methodology

This thesis explores the potential to support the expansion of an Alternative Food System (AFS) in the Paso Del Norte region, with a primary focus on Ciudad Juárez. The original iteration of the primary research question sought to analyze the potential for collaboration between the territorial jurisdictions of the Paso Del Norte. The degree of exchange between initially targeted subjects was found to be minimal. Efforts were then concentrated on Ciudad Juárez specifically, to explore the perceived isolation of its actors and institutions. The primary objective of the research is to increase the legibility of food system planning in the Paso Del Norte and guide further research and action.

The research questions are the following:

(1) Which actors and institutions are seeking to promote Alternative Food System (AFS) planning initiatives in Ciudad Juárez? What are the goals of these actors and to what extent do they align with those of the Food Sovereignty movement?

(2) What are the opportunities and setbacks that stakeholders identify in developing AFS planning initiatives?

(3) What are the potential opportunities for collaboration and mutual benefit that exist between stakeholders within Ciudad Juárez, and between jurisdictions in the Paso Del Norte?

Methodology

This study employs a grounded theory methodology. As a form of knowledge creation, grounded theory is an interpretive research approach. It is an iterative process that oscillates between analysis and data collection to develop theory through constant comparison (Strauss & Corbin, 1994). The purpose of grounded theory analysis is to draw "concepts, conceptual categories and linkages between categories" from those who have direct experience with a phenomenon, to then produce a theory based on their perspectives (Jacobson et al., 2009, p.725). Grounded theory seeks to create content of relevance to academic and non-academic audiences because it takes very seriously the words and actions of those studied. It is, as the name hints, the development of theory, grounded in data, that is the basis of social action. The development of the method relies on an understanding of the "complexity and variability of phenomena and human action and… an awareness of the interconnectedness of conditions (structure), actions (process) and consequences" and thus is apt to form the methodological foundation to guide this food systems analysis (Strauss & Corbin, 1994, p.8-9).

The project has evolved according to the methodology of a grounded theory approach. Introductory research was conducted based on informational interviews and a review of policy documents. Initial participants were identified with the input of local contacts and additional interviewees were identified through snowball sampling. All sampling was purposeful and certain individuals were sought out due to their involvement with

environmental organizations or local food system planning initiatives. Qualitative research was conducted in the form of semi-structured interviews, a review of periodicals, and site visits. Interviews were transcribed and coded, as were periodicals and field notes. The data generated by the qualitative interviews was analyzed whereby key themes were identified through an initial read of the interview transcripts and then a select group of recurring themes was used to code the interview data and establish commonalities and divergences across participants in relation to the themes. In total, 10 interviews were conducted with agronomists, academics, government officials and representatives from non-profit organizations. Further exploration of relevant literature was undertaken, through which a historicization of phenomena identified by participants was made possible and allowed for greater contextualization of their perspectives within broader structural forces. The historicization then informed the analysis of interview data, from which conclusions were drawn.

Positionality

As a Canadian researcher with limited knowledge of the region and a non-fluent Spanish speaker, I approached the research as an outsider but brought assumptions with me. Whatever objectivity was achieved by my lack of familiarity with the Paso Del Norte was tempered by the mythologies of the white settler state and media depictions of the borderlands. Though seeking to advance the decolonization of academia, this work does interpret the voices of others, which can be difficult to incorporate without colonizing those voices in a way that reinforces patterns of domination (England, 1994). For example,

there are stories and personal accounts that were witnessed or shared with me that, although valuable, were not recounted in this work. I relied on the assistance of local residents to navigate Ciudad Juárez and learned a great deal from their perspectives. Grounded theory is particularly useful in this regard as it centres the perspective of the researched, and accepts that their knowledge is greater than that of the researcher. By shifting the power over to the researched, potentially exploitative power relations can be diminished (England, 1994).

Chapter 3. Evolution of Industrial and Agricultural Policy in Mexico

The shift in Mexico from developmental to neoliberal governance can be explored through policy decisions regarding agriculture, industrialization, and social development, as a transition from an agrarian to an industrial society has been turbulent. The following section will serve to explain how the contemporary Paso Del Norte has come to be, by examining major policy decisions that have come to bear on the region. Consideration of these shifts alongside international and continental trends provides a context for understanding the contemporary constitution of the Paso Del Norte region and the critical place of Ciudad Juárez within it. More specifically, it will trace how the shift from a predominantly agricultural region towards an industrial economy came about due to national agricultural and industrial policies on both sides of the border, which played a role in shaping the economic trajectory of the Paso Del Norte region.

The first major upheaval of the 20th century was the Mexican Revolution (1910-1920). A simplified understanding would be to characterize the conflict as a faction of ranchers from northern estates led by Pancho Villa and a faction of southern Indigenous farmers led by Emiliano Zapata that took up arms to secure land rights in response to oppressive conditions created by landed elites (Wolf, 1999). The resulting land reforms created the Ejido system of communal land tenure. Article 27 of the 1917 Mexican Constitution declared:

> "... all land and water in Mexico belonged to the nation, which has the right to impose on private property conditions prescribed by public interest. It established a limit on private property ownership of 100 irrigated hectares or its non-irrigated equivalent, and it fixed the size of the ejidatario parcel at a minimum of 10 [hectares] of irrigated land. Finally, it declared ejido land to be owned collectively by the ejido and to be inalienable" (Lewis, 2002, p.401).

Operated either individually or collectively, ejido land was distributed freely on the condition that it be cultivated. It could not be sold and was generally passed on to a descendant. The socially-owned ejidos occupy more than half the country's territory and account for 80% of production units, being "small, low profit holdings still engaging in subsistence production and dedicated mostly to corn" (Shamah-Levy et al., 2017, p.74).

While the government distributed ejido land freely, complementary resources such as credit and irrigation infrastructure, tended to favour privately owned lands in Northern Mexico, promoting commercialization over subsistence farming (Hicks, 1967).

Ejido land in the Northern states had a greater tendency to be owned collectively, rather than individually, the "concentration of the collective farm in the north and the border region was undoubtedly encouraged by the excellent opportunities for mechanization and crop specialization present on the large, flat tracts of land" (Rochin, 1985, p.259). In the State of Chihuahua, 38.9% of agricultural lands were classified as ejido in 1983, compared to just 28.3% nationally (Rochin, 1985).

Taylor (1990) notes that though the revolution was able to secure land reform, it did not result in the ejido system's incorporation into a comprehensive national agrarian program. Agricultural support policies favoured large-scale producers, failing to reach small-scale and subsistence producers. The latter would be constrained to "low-quality, low-investment, technologically primitive production units" (Scott, 2009, p.5).

The state was able to neglect peasant agriculture in its development processes due to the perceived "mobility afforded by wage labor opportunities in rural and urban Mexico and in the United States" (Taylor, 1990, p.185). Indeed, beginning in 1942, the American federal government instituted the guest farmworker "bracero" program as a measure to maintain agricultural productivity following labour shortages during the Second World War. After the war, the policy was continued until 1964 (Durand, 2007). At its peak in 1956, the bracero program employed almost 450,000 Mexican labourers in the United States (Kosack, 2020). When the bracero program began winding down, a large influx of repatriated Mexicans settled in border cities, and conditions were such that a Border Industrialization Program (BIP) would be undertaken by the United States and Mexican governments in 1958. Tensions would emerge, however, as efforts to spur industrial development came at the cost of a sustainable agricultural policy in Mexico. What would develop instead is an agriculture sector and system of governmental support that is highly unequal and relatively inefficient (Scott, 2009, p.5).

Path towards progress: Developmental State and Agriculture vs Industrialization

The period between 1940 and 1965 has been referred to as the Golden Age of agriculture in Mexico (Spalding, 1985). As a pioneer of the Green Revolution, the Mexican government underwrote costs associated with new grain production technology and built irrigation structures in fertile regions, during which time agricultural production increases surpassed even the industrial growth rate (Spalding, 1985). According to Scott (2009), the share of agriculture in total employment declined from 71% to 26% between 1930 and 1980 and would reach 13% in 2008, yet remains high (30%-40%) in poor southern states still practicing subsistence agriculture on rain-fed lands, highlighting the uneven distribution of agricultural subsidies and labour displacing effects of the Green Revolution technologies (p.23).

During the late 1960s, American markets opened to Mexican agricultural exports, causing a decline in staple production for domestic consumption. In the context of a rapidly growing Mexican agroindustry, commercial farmers in Northern Mexico shifted from basic foods to cash crops for export and luxury domestic markets. As producers shifted away from basic grains, needs for irrigation and associated costs increased. As Liverman states:

> "In the irrigation districts of northern Mexico, acreage has shifted from maize and wheat to crops such as alfalfa and tomatoes that consume more water" (1999, p.108).

State organizations and both Mexican and foreign private capital financing for new technologies and infrastructure ensured “regular, export-quality crops” (Barkin, 1987. p.281). Encouraged by rapid growth in the industry and agriculture sectors, international capital began asserting itself as a force in the restructuring of Mexican agriculture and strong connections between the state and business elites emerged (Spalding, 1985).

In 1965, towards the end of the Golden Age of agriculture, Mexico created a parastatal organization to promote economic and social development through food system planning initiatives. Compania Nacional de Subsistencias Populares (CONASUPO), a public enterprise, served as a “vertically integrated distribution system for staple goods in Mexico”, functioning as an autonomous development agency (Hilger, 1980, p.471).

CONASUPO’s official mandate was to regulate markets of staple foods to protect low-income consumers and producers by offering two types of support: input supports (fertilizers, irrigation, stockholding) and market price supports (Scott, 2009). The parastatal managed retail stores, providing basic foods to those with low incomes, held processing plants for corn, wheat and milk and also offered processing, storage and distribution services (Yunez-Naude, 2003). Markets were to be regulated by creating “a more efficient and rational relationship between producer and consumer and the elimination of inefficient and dishonest intermediaries” by competing with private sector producers, wholesalers and retailers, supporting prices for producers of staple crops, and regulating trade (Hilger, 1980; Yunez-Naude, 2003, p.98).

In the context of a developmental state adopting measures to implement Import Substitution Industrialization (ISI) and a Border Industrialization Program (BIP), price controls of staple goods successfully maintained low urban wages, with the consumer-oriented programs mostly operating in urban areas (Barkin, 1987). Rural consumers not serviced by these government programs were often forced to pay the inflated prices that CONASUPO guaranteed producers (Avalos-Sartorio, 2006). Thus, the higher prices transferred to producers were absorbed by rural consumers and taxpayers (Avalos-Sartorio, 2006, citing Larson, 1993).

Price supports were based on output, and large-scale producers in irrigated areas were best positioned to benefit from price supports, as their yields were much higher. Subsistence farmers in rain-fed areas most in need of assistance, which accounted for the majority of producers, were allocated only 32% of total price supports (Avalos-Sartorio, 2006, citing Levy & van Wijnbergen, 1992).

CONASUPO's market biases also encouraged production irrespective of transport and storage costs, resulting in poorly located production centres and high marketing costs that continue to this day. Avalos-Satorio (2006) notes that as a result of the crowding out of private firms, "functional marketing institutions (information systems, private standards, forward markets, etc.) are still largely missing" from the Mexican food system (p.315).

Thus, CONASUPO's programs were indicative of a developmental state apparatus, but they were not necessarily 'benevolent' in terms of support for small-scale or subsistence farmers. Despite CONASUPO's attempts to assist agricultural development by supplying fertilizer, improved seeds, marketing and peasant training programs, etc., a shift away from Mexican self-sufficiency would be inevitable as regulated and inefficient domestic markets catered to emerging urban-industrial regions rather than peasant producers (Barkin, 1987; Yunez-Naude, 2003). And more generally, the development of urban industrial regions under ISI policy was also highly uneven and largely centred around the country's largest domestic markets (chiefly Mexico City but also Guadalajara and Monterrey).

In response to high rural poverty rates and shortages of domestic staple production, the federal government launched the Sistema Alimentario Mexicano (SAM) policy in 1980, designed to create consistent policies throughout the food system to overcome the structural crisis of the agricultural sector and attain food self-sufficiency. Whereas in previous decades, incentives were oriented towards larger producers, the SAM broke with tradition by emphasizing efforts to increase the output of small producers that focused on promoting rural development to stimulate staple food production.

The SAM program was a "large-scale reorganization and expansion of state agencies" that was meant to better integrate farmers into the national food system and revitalize a neglected yet politically important state-peasant alliance (Taylor, 1990, p.186). It supervised the deployment of a suite of programs to help stimulate production,

operationalized through existing government entities. The SAM increased the guaranteed price for staple grains that CONASUPO would provide to producers. SAM also made credit more available through BANRURAL[6], reduced insurance and interest rates, reduced input costs, and designated packages of technological innovations. Figure 2 shows the drop in agriculture exports that indirectly indicate the increased production for domestic markets, as well as the increased oil export revenues in the 1980s that helped fund the SAM.

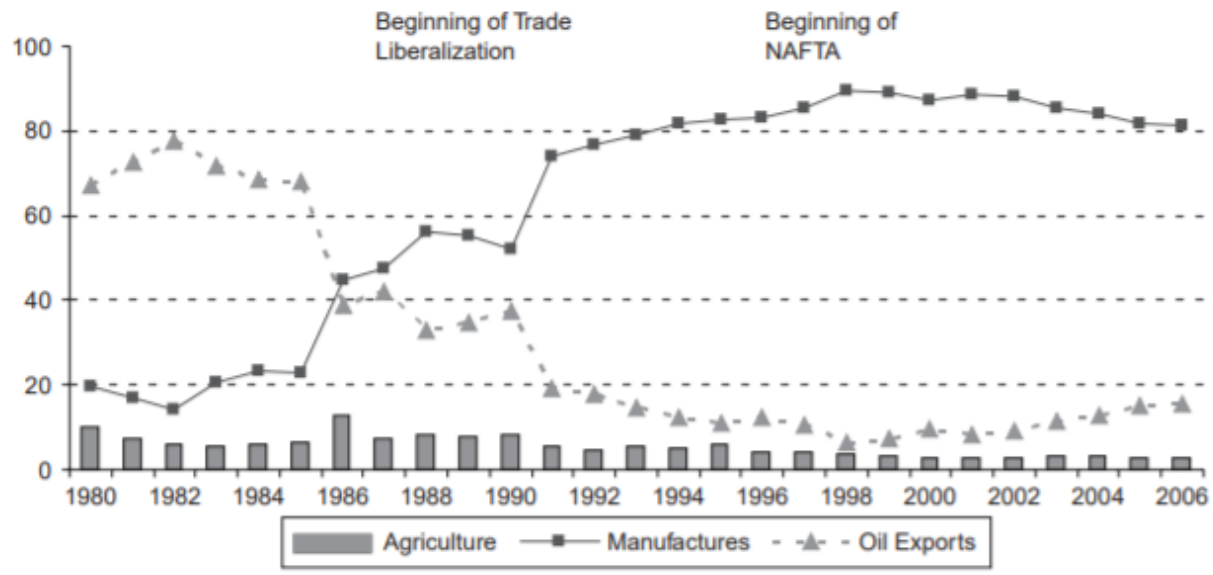

Figure 2. Composition of total exports, Mexico 1980-2006 (%)

Source: Moreno-Brid et al., 2009.

The strategy saw some success as staple production rebounded. In an interview, Professor Alfredo Granados-Olivas, a university professor, rancher and community

[6] Federal Development Bank until 2002.

activist, recounts how in the early 1980s, agronomy schools were attracting a lot of students, as a great need for agricultural specialists was apparent and government positions were desirable:

> "I was studying from '80 to '84 so I saw the process. In '80 there was a lot of jobs in there [sic]. That's one of the reasons I studied agriculture. There was [sic] a lot of investments, there was a lot of work. 95-98% percent of the jobs, the graduates were getting jobs in the government, because they were good paying and there was a lot of money moving through there so everybody wanted to do something in agriculture… in '82 we completely destroyed the process" (Interview, October 2016).

The SAM program ended abruptly in 1983. Spalding (1985) cites agro-technical issues, bureaucratic politics, state-agribusiness alliances, and the weak fiscal structure of the state, in explaining the program's demise.

Agro-technical issues emerged as peasant farmers resisted the "improved" seed varieties that produced higher yields but required greater inputs and were not as tolerant to drought or mould. Given the lack of irrigation, transportation and storage infrastructure[7] in some regions, risks were deemed too great and producers favoured local seed varieties, which would guarantee a minimum harvest[8]. As seeds were part of a development package, the

[7] Austin and Fox (1987) note that transportation and storage infrastructure were not able to adapt to the sudden increase in productivity from SAM policies, whereby "25% of grain was lost in Tamaulipas in 1981 due to lack of storage facilities and transportation" (p.209).

[8] From Canby (2010) "In the Mexican countryside there are fifty-nine corn "landraces," distinct cultivars that have been carefully developed over millenniums by indigenous farmers for different attributes: growth at high altitudes, early or late maturation, the ability to withstand drought or heavy rain and utility for particular dishes or shamanic rituals".

other benefits offered by the SAM were often withheld as a result. The program's top-down approach was incongruent with the realities in the fields.

Like the agro-technical issues that emerged in certain regions, CONASUPO's uniform policies did not account for differences across income groups or regions, and its wholesale application diminished its ability to target elements within the food system most in need of stimulus. Moreover, in some instances, policies would increase inequalities as rural labourers and subsistence farmers tended to be net buyers of staple foods, and due to uneven access to subsidized consumer staples, would be forced to pay the higher producer price (Alvaro-Sartonio, 2006).

Bureaucratic politics also played a role in the program's suboptimal performance. Organizations tend to develop internal standard operating procedures that are imbued with a specific identity, which is reproduced by patterns of selection and enculturation of personnel. As the directors of the ambitious SAM program did not control appointments or budgets of these agencies they had limited influence. As Spalding (1985) explains:

> "Many at the service delivery level of these agencies continued to function according to the standard procedures that had long characterized their organizations. Some of these procedures had contributed to the food crisis in the first place, and were often diametrically opposed to the purpose and programs of the SAM" (p.1255).

Alliances between the state and business elites that had been growing since the 1940s also tempered SAM's success. Non-staple production and its related industries tended to be controlled by the wealthy due to high start-up costs and the required technology imports. Under the SAM program, resources were diverted away from these industries and new measures threatened the conventional system, which raised tensions and brought opposition from the privileged agricultural elites, ultimately forcing SAM to "deradicalize" the program (Spalding, 1985).

Finally, the Mexican developmental state sought to develop infrastructure and deliver social programs through deficit spending and heavy foreign borrowing, rather than taxation, resulting in a weak fiscal structure that could not support its developmental goals. When oil prices dropped in 1982, interest rates rose and the "fragile financial foundation crumbled" (Spalding, 1985, p.1257).

Shift from developmental state to neoliberal state

After Mexico defaulted on foreign debt payments in 1982, pressure from international lending institutions, a powerful domestic private sector, and transnational capital worked to impose a framework of privatization, deregulation and trade liberalization (Preibisch et al., 2002). The shift was further cemented by what Babb (2001) describes as a transformation of the Mexican civil service, as American-trained neoclassical economists would come to dominate the political elite. Unsurprisingly given the circumstances, import substitution and state-led industrialization gave way to a model with "diminishing direct

state intervention" (Moreno-Brid et al., 2009; Yunez-Naude, 2003, p.100). These new policy orientations had a significant effect on national food policy, where direct government intervention had been an important component of the country's development policy since the 1930s (Preibisch et al., 2002; Yunez-Naude, 2003). Barkin (1987) concluded that the potential benefits of a transition towards trade liberalization would not reach the working class, as "employment opportunities [were] limited and welfare programs virtually nonexistent" (p.276).

The SAM represented 10% of the government budget in 1981, and as neoliberal reforms were undertaken, it was abolished and replaced with Programa Nacional de Alimentación (PRONAL), which focused on food crisis aversion in response to immediate food security issues (Coneval, 2010). PRONAL maintained CONASUPO's production and distribution services, but efforts to build peasant agricultural capacity were diminished, even as guaranteed prices and some insurance and credit services remained active. In 1986, Mexico joined the GATT, prompting trade liberalization initiatives in subsequent years (Mendoza Leon, 2015; Yunez-Naude, 2003). The following year the country suffered another economic crisis, provoking further program restructuring (Coneval, 2010). By 1988, the Mexican government had sold off "more than 1000 government-owned or -managed companies" and had begun abolishing or privatizing elements of the country's staple food distribution system (Liverman & Vilas, 2006, p.333-334; Yunez-Naude, 2003).

TABLE 1
Stages of CONASUPO's Liquidation (1985 to 1999)

	Function Mid-1980s	*Status Mid-1990s*	*Status 1999*
CONASUPO (National Company of Popular Subsistences)	Price interventions in 12 basic staples	Interventions in corn, beans and milk powder	Liquidated
Subsidiary/Programmes of CONASUPO			
PACE (Market Support Programme for *Ejidal* Products)	Marketing subsidies to *ejidos*	Prevailed as part of CONASUPO's functions	Eliminated
BORUCONSA (CONASUPO's Rural Warehouses)	Rural storage of basic crops	Transferring warehouses to farmers and to local authorities	Closed
ANDSA (National Warehouses)*	Urban storage of basic crops	In process of privatisation	All companies privatised but one
MICONSA (Industrialised Corn)	Corn processing	Privatised	
ICONSA (CONASUPO's Industries)	Food processing**	Privatised	
TRICONSA (Industrialised Wheat)	Wheat processing for bread	Abolished	
LICONSA (Industrialised Milk)	Processing milk powder to produce fluid milk for the poor	Part of the Ministry for Social Development or SEDESOL	Part of SEDESOL. Responsible for purchasing and industrialising milk for the poor
IMPECSA (Small Commerce Support Subsidiary)	Distribution of staples to shopkeepers at subsidised prices	Abolished	
CECONCA (Extension programmes of CONASUPO)	Technical supports to farmers	Abolished	
DICONSA (Distribution and Trade Promoting Subsidiary)	Sales of basic food in CONASUPO's retail stores	Part of the Ministry for Social Development	Buying inventories left in CONASUPO, administering a technical reserve of corn, and buying crops directly for its stores
FIA (Finance for the Associated Industries)	Financial supports to basic food industries	Privatised	

Notes:
* Not a subsidiary, but supplied storage services to CONASUPO.
** Edible oils, corn and wheat flour, wheat pasta, and animal feeds.
Sources: CONASUPO, Gurza (1994), OCDE (1997) and Casco (1999).

Figure 3. Stages of CONASUPO's liquidation (1985-1999)

(Souce: Yunez-Naude, 2003)

Deep market integration and retrenchment of the developmental state

Under the Salinas administration (1988-1994), the push towards privatization and world market integration accelerated with the radical transformation of border protections for Mexico's agricultural sector. By the mid-1990s, CONASUPO's subsidiaries would be mostly dismantled or privatized, with the exception of LICONSA (industrialized milk) and DICONSA (basic food retail stores) which were assumed by the Secretaría de Desarrollo Social (SEDESOL), the Ministry of Social Development (Yunez-Naud, 2003).

The Salinas administration also introduced an amendment to article 27 of the constitution, the New Agrarian Law of 1992, which granted ejido owners the right to rent, sell or mortgage their previously inalienable land and to engage in business ventures with the private sector (Lewis, 2002). This further untethered peasants from the ejido system. De Ita (2006) finds that the land rental market is growing as ejidatarios are unable to make their lands productive due to lack of “capital, inputs, credit, income yield capacity, and market access”, and thus are renting them, not to small producers, but agricultural capitalists, forcing a reconcentration of land (p.162).

Professor Granados-Olivas elaborates this point by describing the situation in the area around Ciudad Juárez:

> “Because the ejidatarios were really old they could not work their fields anymore, or they had died and they inherit [to] their sons or grandsons. But these guys, they don't want to be ejidatarios, they were working in the maquiladoras, you know what I mean? So they sold that. So what they did, the big guys with big money, they bought a lot of land and then it came back to 1910, when big haciendas (estates) were there. So we have, right now in Mexico, we have big haciendas, but not for one person, for corporate farms” (Interview, October 2016).

These reforms set the stage for the accelerated market integration in 1994, as the North American Free Trade Agreement (NAFTA) further cemented the economic integration in

North America by again reducing barriers to investment and trade (Liverman et al., 1999). The agreement allowed Canadian and American manufacturers to seek investment opportunities anywhere in Mexico, no longer limiting export processing to the border region, thus substituting the export promotion strategy into one of regional integration (Robinson & Bookbinder, 2007; Sánchez-Reaza & Rodríguez-Pose, 2002).

A boon to the manufacturing industry, NAFTA also transformed the agricultural sector. Supporters of NAFTA maintained that the "agreement would yield a new agricultural equilibrium in which the United States would produce basic grains at low cost, and Mexico would have a comparative advantage in fruit and vegetable production" (Liverman et al.,1999, p.621). Soon after, in 1996, GMO corn would be commercially planted in the United States, further lowering costs of production which was not accounted for in the NAFTA negotiations. As of 2008, all non-tariff restrictions on the trade of agricultural goods were lifted (Moreno-Brid et al., 2009). By 2009, 85 percent of US corn would be classified as GMO.

The liberalization of agricultural trade was to benefit large producers on irrigated land that profit from increased mechanization and export opportunities under NAFTA. While small producers in rain-fed areas would suffer losses, having fewer substitution possibilities as maize becomes less valuable (Levy & van Wijnbergen, 1994, p.278). Further, the problem was compounded by agricultural policies that did not effectively alleviate the economic pressures during this transformational period.

Agricultural policies

Scott (2009) finds that subsidies have been biased towards large-scale grain producers, with little evidence of significant inducement in production or employment, which now may even be counterproductive towards building the comparative advantages of fruit and vegetables after the market liberalization (p.19). Nonetheless, some agricultural policies did deviate from previous support programs, reflective of the neoliberal turn in governance by providing stimulus for market mechanisms instead of government intervention.

The Programa de Apoyos Directos al Campo (PROCAMPO), or Program of Direct Support of the Field, was launched in 1993 by the Secretariat of Agriculture and Rural Development (SAGARPA) to replace the dismantling of CONASUPO in anticipation of the opening of markets to Canada and the United States under NAFTA. The program was designed to move away from the system of price supports for basic crops to instead provide direct cash transfers to agricultural landholders. The goal of the program was to protect farmers by providing financial support for a fifteen-year transitional period, yet the program had continued to evolve beyond that deadline[9].

The direct cash transfer circumvented agricultural subsidy limitations imposed by the GATT and intended to reach rural households that had hitherto been neglected. Scott (2009) calls the decoupled design of PROCAMPO “revolutionary in terms of efficiency as

[9] The program was slated to end in 2008, but it continued and was renamed PROCAMPO productivo, emphasizing its goals of increasing productivity. It would later be renamed PROAGRO productivo, which differed in its limiting of support to certain types of grains and varied the amount of support offered over the years. It continued until 2019, when President López-Obrador reintroduced price supports.

well as equity" in comparison to previous agricultural policies (p.8). Alvaro-Sartonio (2006) notes that since most small scale producers were net buyers, they did not benefit from CONASUPO's guaranteed prices, whereas PROCAMPO now saw government support reach many of them for the first time. The income allowed registered producers to use expected future payments as "guarantees for credit and input purchases" (Alvaro-Sartonio, 2006, p.316). However, SAGARPA also offered several other programs, for which funds were not distributed according to need, leaving the poorest states with a small portion of total funds despite the high number of farmers (Coneval, 2018).

The National Council for the Evaluation of Social Development Policy (Coneval)[10] published a diagnosis that indicated that the imbalance in productive subsidies to rural areas has increased inequality by focusing on large producers in the north and neglecting marginal and indigenous regions (Coneval, 2018). The report concluded that substantial investments in the provision of public goods (rural electrification, storage and transport infrastructure, retail centres, etc.) were necessary to assist small producers to escape extreme poverty. Unfortunately, public confidence in the government's ability to implement such projects is low[11].

Professor Alfredo Granados-Olivas recalls his personal experience with government infrastructure programs:

[10] Established in 2004, CONEVAL is a government agency with technical and administrative autonomy (Shamah-Levy et al., 2017).

[11] Recently, the national oil producer PEMEX's attempt to revive fertilizer plants has resulted in scandal, where Pemex misused $665 million at its fertilizer unit and the former head of the oil firm is facing corruption charges (Daniel & Eschenbacher, 2019).

> “I bought some infrastructure for my ranch so I submitted an application and the first thing to understand, and it's why it doesn't really work, you have to pay for 100% of the investment and the government will give you back 70%, but once you pay that 100%. I bought a trailer for my lambs, so I have to pay the cost from the provider for that infrastructure and then I submitted the bill to the government and the application and documents from the ranch... then they give you [the subsidy] back 3-4 months later... It's really bureaucratic. But the most important thing is not everybody has 100% to invest in that. So it's pretty much a doomed project” (Interview, October 2016).

The lack of support for those unable to overcome the bureaucratic hurdles along with a lack of public investment resulted in a further intensification of rural to urban migration as small grain producers, unable to compete with the heavily-subsidized the United States industrial agriculture sector, were pushed towards urban areas (Mendoza Leon, 2015). However, Moreno-Brid et al. (2009) note that employment opportunities remained a hurdle to prosperity in Mexico by 2008 as growth had been “sluggish and subject to periodic financial crisis, and it has failed to create the number of jobs required by the labour force estimated at between 800,000 and one million per year” so that the disruption to rural economies has not been offset by urban economic growth (p.155).

Along with the phenomenon of rural to urban migration, Canby (2010) describes a phenomenon of a “retreat to subsistence” by rural indigenous peoples that have been

disenfranchised by the trade policies and impoverished by market liberalization. Perhaps most troubling is the fear of GMO crops[12] threatening biodiversity and cultural practices, a clear threat to the food sovereignty of indigenous peoples as GMO genes have reportedly, though not without controversy, been found in landrace varieties stoking fears of a loss of an important cultural artifact (Canby, 2010).

Pressures from foreign agricultural products are also changing diets in Mexico. The food and marketing industry now consists of a larger share of Mexico's GDP than agriculture (Shamah-Levy et al., 2017). The import of US GMO corn has been a central aspect of industrial food transformation industries in Mexico, which promote the expansion of food processing manufacturing that is dependent on foreign inputs (Mendoza Leon, 2015). The development model exported by the United states (explored in Chapter 2), whereby "agriculture and industry would articulate in a virtuous cycle of technologically-based growth" and create a co-development of national agriculture and industry, is undercut by the incorporation of United States agricultural exports into commodity chains. Moreno-Brid et al. (2009) explain how China has followed an industrial policy that "has created 'linkages' requiring foreign investors to buy materials in China", where, by contrast, NAFTA precluded such agreements. As a consequence, Mexico's export sector consists of assembling imported components, limiting the formation of backwards linkages that could stimulate economic diversity. This paradigm holds true for both the technology-

[12] This development was not accounted for during NAFTA negotiations and has been a contentious issue in Mexico, where GMO corn is not permitted to be commercially grown, yet is permitted for biotech companies to maintain experimental plots and is imported from the United States. The controversy extended to Ciudad Juárez with the appointment of Ruben Chávez as Secretary of Rural Development, as he was the president of the pro-GMO alliance that sought to pressure the federal government to allow commercial use of GMO corn varieties (Perez Espino, 2016).

oriented maquiladora industries and industrial food transformation industries (Canby, 2010, para. 22).

Social Policies

> **“**As ejidatarios, the government didn't invest in them, destroyed every town from the 1980s to here. So they wanted them to die, so they can take back, steal their lands” - Alfredo Granados-Olivas

Scott (2009) notes that the “historical bias against small-holders, subsistence farmers and landless agricultural workers” was not simply contained to the allocation of agricultural subsidies, but included other forms of exclusion from social and anti-poverty programs until the late 1990s, when basic education and health services were expanded and the urban bias became less important (p.6). The following section will briefly go over the evolution of major social policies during the period of transition of Mexico’s governance structure.

The unsuccessful PRONAL federal food program of the 1980s was replaced with a new program (1989-1993), called “Programa Nacional de Solidaridad” (PRONASOL), which marked an important restructuring as resources were increasingly channelled through existing Ministries instead of relying on the CONASUPO state enterprise or creating new bureaucratic structures. PRONASOL’s main operational innovations included a greater decentralization of programs, a new scheme of coordination between levels of

government (federal, state and municipal) that was associated with decentralization, and conditional cash transfers to low-income households. However, the program was widely criticized as the resources were insufficient given the magnitude of the problems (CONEVAL, 2010). Though across-the-board staple food subsidies were phased out in favour of targeted subsidies, the capacities of the targeted social policies were exceeded under PRONASOL and failed to significantly improve the living standards of the majority of those living in poverty (Moreno-Brid et al., 2009).

In 1997, to tackle the persistently high levels of extreme rural poverty, several ministries developed the Programa de Educación, Salud y Alimentación (PROGRESA), or the Program of Education, Health and Nutrition, which expanded the conditional cash transfers that began under PRONASOL. The transfers were intended to break intergenerational cycles of poverty of families that met the criteria set forth by the health, nutrition and education agencies. Other initiatives such as school lunches and programs to target low-income indigenous communities were also put forward. The program has since undergone several changes, called OPORTUNIDADES Human Development Program into what is now known as the PROSPERA Social Inclusion Program as part of a national strategy to combat hunger, the Cruzada Nacional Contra el Hambre (CNCH) 2013-2019 or National Crusade Against Hunger.

Along with the aforementioned initiatives, PROSPERA offers families living in extreme poverty a basic basket of foods, called a “despensa” through DICONSA stores. Manon et al. (2017) note that focus groups in Ciudad Juárez describe PROSPERA as “unreliable

and often available only during elections" which highlights the clientelistic nature of social program delivery in Mexico (p.14). This has been reiterated during fieldwork where many complain that party loyalists disproportionately benefit when their party is in power.

During my fieldwork, I was able to observe the recent iteration of a social development initiative to combat food insecurity through the CNCH campaign. The federal government, through a participatory process, sought to promote coordination between different institutions and orders of government (federal, state and municipal) and the self-management of the communities themselves. The CHCN, then, was created not as a program but as a national strategy that aligns programs and actions, allowing the creation of new programs while seeking more efficient inter-institutional coordination. CNCH does not have its own budget, but operates through the resources received by the various participating federal programs (Hernández et al., 2015).

The CNCH had established 5 goals, according to CONEVAL (2014a):

1. Adequate food and nutrition for people in extreme multidimensional poverty and lack of access to food.
2. Reduce acute and chronic child malnutrition, and improve indicators of childhood weight and height.
3. Increase food production and the income of peasants and small agricultural producers.
4. Minimize post-harvest and food losses during storage, transportation, distribution and marketing.
5. Promote economic development and employment in the areas of greatest concentration of extreme food poverty.
6. Promote community participation for the eradication of hunger.

CNCH began with a selection of 400 municipalities nationwide where extreme poverty and food deprivation were present, of which Ciudad Juárez was included (Interview with Veronica, September 2016; Medel-Ramírez & Medel-López, 2018). These areas are usually designated as *Zonas de Atención Prioritaria* (ZAP), zones of priority attention.

The goal of community participation was addressed by creating the program of Comedores Comunitarios, where beneficiaries could access a community dining room which served meals on a sliding scale of 1 to 10 pesos. In 2017, there were over 5,000 such establishments and at least 40 in Ciudad Juárez (Interview with Veronica, September 2016; Martinez, 2017). The Comedores Comunitarios had the potential to tackle many of the CNCH's goals simultaneously.

The governance of Comedores Comunitarios is anchored in local communities and was expected to offer opportunities for cooperation at various scales of government. They were established by holding a community assembly and appointing a committee to oversee the creation of the Comedor Comunitario, and appointing volunteers that would work in the kitchen and manage its monthly budget. The community participation component involved organizing committees that would prioritize the needs of beneficiaries. Along with collecting fees, volunteers[13] were given access to additional funds to purchase perishable foodstuffs locally (Consejo Nacional de Evaluación de la Política de Desarrollo Social, 2014b).

[13] Volunteers were mostly women, as noted in a Coneval study that the Comedor Comunitario is highly gendered and perceived as a "women's issue", imposing an additional burden on women within the community (Coneval, 2014b).

Non-perishable foods and equipment were provided by DICONSA, a vestige of CONASUPO that maintains rural stores, warehouses and a transportation network to supply basic goods, operating under SEDESOL. In some instances, backyard orchards, poultry farms and demonstrative gardens would also be built to induce local agricultural production, however, this had not been implemented by 2015 and no resources had been distributed by SAGARPA (Hernández et al., 2015).

I visited a Comedor Communitario as part of a site visit to peri-urban gardens that were set up by the state-owned water service provider JMAS. In a community on the urban fringe, community members maintained private gardens and would often donate produce to the Comedor Comunitario. The gardens were maintained in collaboration with a local agronomist that was formerly employed by JMAS. When the recent election caused a reordering of civil service positions along party lines, she lost her job but continued to return to the community to ensure the continuation of the garden project.

Unfortunately, as this case illustrates, such projects are often ephemeral and do not outlast the administration that creates them. Martinez (2017) addresses the issue of the durability of the Comedor Comunitario program once the Peña Nieto administration ends in 2018 and rightly indicates that assistance programs are largely temporary and budgets fluctuate annually. These remarks were quite prescient as the current administration under President López Obrador has restructured[14] the Ministry of Social Development

[14] DICONSA and LICONSA have also been restructured under the new program SEGALMEX (Mexican Food Security) in 2018.

(Now Ministry of Welfare) and cancelled the Comedores Comunitarios program in 2019 (Ocaranza, 2019).

While the Community dining rooms did help reduce hunger in many communities, the CNCH failed to meaningfully promote engagement between governing bodies. CONEVAL found that the advances made by the CNCH were vulnerable as the strategy depended on personal relationships between officials and informal agreements that were disrupted by personnel changes in the three areas of government (Coneval, 2014a).

Further, the CNCH promoters did not have the capacity or flexibility to respond to the needs identified by the communities. Though planning exercises were carried out, no new processes were activated, so that expectations generated by the beneficiaries were not met. By failing to implement the decisions made by community groups, the goal of community participation failed to fulfill its central purpose of empowering beneficiaries, so that their ability to exercise social control was limited and the goal of making communities co-responsible for the outcomes of the program was not reached (Coneval, 2016). Hernandez et al., (2015) have similarly noted that “the permanence of the dining rooms can also be threatened by... the level of involvement of the community and the degree of progress in the implementation of [other project components]” (p.23, my translation). From Coneval (2014a) :

> “there was no evidence that the programs use the information generated in the states and municipalities (investment matrices), or in the community

committees (community plans) to guide their investment decisions" (p.7, my translation).

It was noted that in some jurisdictions, parallel programs at state and municipal levels competed with those of the CNCH, diluting the effectiveness of the program and creating redundancies that did not effectively reach the targeted beneficiaries (CONEVAL, 2014a).

The goals of gradually reducing the need for social assistance supports, by increasing the production capacity of small rural producers through better inter-institutional collaborations and community participation were undermined by a failure to incorporate local decision-making into the operation of the programs and by a lack of coordination between ministries and levels of government.

Evans (1995) finds that building efficacious political organizations depends on finding a "joint project" to unite the state apparatus and its societal constituencies, similar to the way the project of industrial transformation joined industrial capital interests and the developmental state (p.246). However, in contexts where electoral politics are "usually associated with clientelism and the capture of the state" this prescription can be met with skepticism (Evans, 1995, p.246). Based on this example, greater autonomy of societal constituencies may present an opportunity for sustained program development that is not as vulnerable to electoral cycles and the ruling party's ephemeral societal projects.

Conclusion of this Chapter

Mexico has undergone an important transformation, where the transition from a developmental state to a neoliberal state had profound repercussions on both the manufacturing and agricultural sectors. The developmental state's urban bias coupled with a favourable climate for agricultural elites created harsh conditions for subsistence farmers and rural labourers, perpetuating levels of extreme poverty in rural areas, especially the South.

Regional differences were not isolated to the agricultural sector. They also came to bear in the state's support of manufacturing and industrial development, which sought to promote industrialization at the expense of rural economic development. Both the subsidized food and rural to urban migration fueled the manufacturing sector with a reserve army of workers and a subsidy to their social reproduction in the form of CONASUPO's various food subsidy programs.

Self-sufficiency goals would be abandoned in favour of global market integration in the era of GATT and NAFTA. Thanks to preferential treatment by the developmental state, large agricultural producers were well-positioned to benefit from trade liberalization and motivated to dismantle state capacity that sought to regulate it (e.g., CONASUPO and SAM). Transnational corporate alliances would replace those within the state apparatus, a prominent feature of the Corporate Food Regime.

Industrial capital also benefited from the developmental state under the advanced stage of ISI (1959-1985) as the “[t]he longer-than-required protectionism engendered a large but rather inefficient industrial sector” resulting in oligopolistic structures (Sánchez-Reaza & Rodríguez-Pose, 2002, p.76). This resulted in high prices to consumers and low quality compared to foreign goods, undermining Mexico’s competitiveness and contributing to the failure of ISI.

However, Mexico's bureaucratic devotion to ISI was not monolithic and regional differences in industrial development created a new dynamic under the neoliberal restructuring of the State. As the Border Industrialization Program steadily increased its share of manufacturing output, the ascendancy of Ciudad Juárez as a global node in manufacturing gave the state a new avenue to direct its transformative aspirations. As the Mexican export promotion strategy gave way to the process of regional integration under NAFTA, the constituent jurisdictions of the Paso Del Norte transborder region developed distinct roles within an emerging economic order.

Chapter 4. Situating Ciudad Juárez and the Prospects for an Alternative Food System

This chapter provides a closer examination of the context of Ciudad Juárez and some of the challenges to establishing an alternative food system planning there. To better situate

the discussion of Ciudad Juárez and an assessment of food system prospects, it begins with a brief overview of the transborder, regional setting of the Paso Del Norte – an integrated economic region of which Ciudad Juárez is a critical part. Given the strategic location, integration and cooperation with United States-based institutions within this region are common, however, the border cleaves the economies in distinct ways. The implications of this for Ciudad Juárez and its socio-economic organization are explored before delving into a closer analysis of the specific set of challenges and opportunities associated with growing an AFS (alternative food system).

The Paso Del Norte Urban Region

The Paso Del Norte transborder region is recognized by the OECD as the territory which includes the cities of Ciudad Juárez, Chihuahua in Mexico as well as El Paso, Texas and Los Cruces, New Mexico in the United States of America (Regional Stakeholders Committee, 2009). It is currently the largest urban region along the United States-Mexico border and home to one of the world's largest manufacturing complexes. Characterized by a "harsh physical environment, rapid growth, and economic integration," the region has been a site of tremendous change, and faces unique challenges as a result (Liverman et al., 1999, p.607).

The Paso Del Norte's centrality in global circuits of capital is contrasted by its distance to national policymakers (Liverman et al., 1999, p.617). Indeed, the geographic distance from both the United States and Mexican national capitols has "historically led to [a] lack

of influence from local levels and conversely a lack of understanding among national policy makers" (Regional Stakeholders Committee, 2009, p.1). Nonetheless, national policies have exerted a strong influence on these border regions. Staudt (2010) notes that the Mexican and American governments roles offer a stark contrast at the border. The United States has expanded its presence to increase law enforcement and border security while Mexico's role has shrunk to accommodate global capital.

The region has experienced massive demographic change, most notably in Ciudad Juárez, with a more than doubling of the population between 1980 and 2005, from 567,365 to 1,393,338 people (Grineski et al., 2015). The change can be largely attributed to decades-long policies incentivizing rapid industrialization, where the manufacturing sector (or Maquiladora Industry) accounts for 65.6% of total employment in the city.

EMPLEO EN JUÁREZ POR SECTOR ECONÓMICO (SEPTIEMBRE 2019)

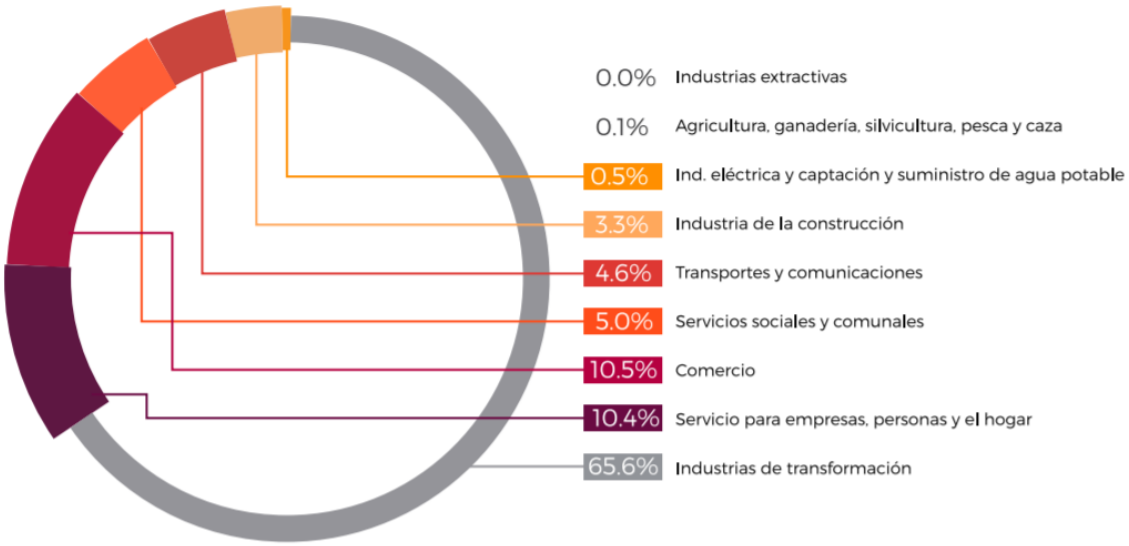

Figure 4. Employment in Juárez by economic sector (September 2019)

Source: Plan Estratégico de Juárez, 2019.

El Paso, Texas accounts for over 600,000 of the 3+ million population conurbation. Its economy is largely integrated with that of Ciudad Juárez, providing support functions to the maquiladora industry. Logistics, transportation and warehousing services as well as regional command functions, tend to be located in El Paso. The University of Texas at El Paso (UTEP) and call centres are also large employers in the region, along with Fort Bliss military base.

Las Cruces, New Mexico is the second-largest city in the state with a population of just over 100,000. The primary economic activities are mostly removed from the manufacturing centre. The city is home to the New Mexico State University with links to medical centres, military and aerospace industries. Both Las Cruces and El Paso maintain knowledge-intensive sectors within their economies (Regional Stakeholders Committee, 2009).

Through centuries of cultural historical integration, an interconnectivity has developed between the three communities, forging “numerous personal and business ties among residents [which] often translate into a support system for sharing resources and information” (Regional Stakeholders Committee, 2009, p.64). At the institutional level, cooperation to address issues that affect shared resources is longstanding. One such iteration, the International Boundary and Water Commision/ Comision International de

Limites y Aguas (IWBC/CILA), was established in 1944 to manage water resources and establish border demarcations. Federal departments in the United States and Mexico also share resources and jurisdiction in the border region, such as the Environmental Protection Agency (EPA) and Secretariat of Environment and Natural Resources (SEMARNAT). These two organizations share a jurisdiction according to the 1984 La Paz agreement, whereby the 'border area' refers to the area situated 100 kilometres on either side of the inland and maritime border (EPA, 2015). The La Paz agreement allows both parties to conclude specific arrangements to resolve common problems in the border area and these agreements have been continuously renewed.

According to EPA Director Carlos Rincon, they have successfully tackled issues such as air pollution and water resource management in partnership with local institutions in the border area. However, their interventions are limited, as they must adhere to the precise language within the bilateral agreements. The EPA recognizes the challenges at the border given that they require coordination across various programs, at multi-government levels and including the private sector (EPA, 2015).

Other transborder governance structures exist as well, such as the Border Environment Cooperation Commission (BECC) and the North American Development Bank (NADB), established alongside NAFTA to ensure compliance with environmental quality standards and promote urban development. Their focus is on applying binational policies and programs to support sustainable infrastructure projects, such as solar farms or retrofitting

wastewater treatment facilities, in collaboration with municipal and state-level organizations.

With regards to Mexico, however, Liverman & Vilas (2006) note that capacity to act is limited, citing a lack of legislation and enforcement, combined with a weak institutional framework, which allows for the violation of environment and labour laws in Ciudad Juárez. Heyman (2007) contends that "[w]eak territorialization of collective action (both public participation and state-bureaucratic regulation) gives locational advantage to producers shifting dirty processes south", despite commitments of environmental protection under NAFTA and the creation of institutions, such as BECC and NADB, to ensure compliance (p.332). In this way, loose enforcement acts as a pull factor for foreign investment but is at odds with efforts to mitigate the negative effects of a development model that relies on Ciudad Juárez occupying a subaltern position within a regionally-integrated manufacturing economy.

Ciudad Juárez - A Transborder City

As the birthplace of the Maquiladora Industry, Berndt (2013) characterizes Ciudad Juárez as an "early laboratory for the ideas through which the neoliberal global economy realizes itself: liberalization, free trade, free movement of goods—all translated into a development model—export-oriented industrialization" (p.2651).

The Maquiladora Industry is the result of a binational export-import regime that began in the late 1950s as the Border Industrialization Program (BIP) mentioned in Chapter 3. It

was designed to stimulate manufacturing along the northern Mexican border by allowing the tax-free import of inputs to production subject to the re-exporting of outputs. Officially, the program was intended to create jobs for the men returning from agricultural jobs in the United States as the Bracero program ended[15]. However, women quickly became the dominant source of labour supply for the manufacturing sector, as they were marketed as docile and nimble-fingered workers (Wright, 2004).

The BIP was initiated by former Ciudad Juárez Mayor Antonio Bermúdez, appointed by the federal government in response to political unrest fomented by the uneven development. The distance of Juárez from major Mexican markets made ISI unworkable, but proximity to the United States markets allowed the development of an export-oriented industrialization model. While other border cities that were geographically closer to the United States markets also developed industrial parks, Ciudad Juárez rose to prominence among Mexican export platforms by the late 1980s due to the political influence and advocacy of Antonio Bermúdez and with direction from a United States-based consulting firm. According to Goldfrank & Shrank (2009):

[15] Goldfrank and Schrank (2009) have posited that the BIP was not explicitly a project of job creation for repatriated male agricultural workers, but an effort to appease northerners who were largely neglected in Mexico's urban bias and ISI projects. They note that under ISI, industrial interests benefitted large cities and their satellites and "punished traditional agricultural and commercial interests in the hinterland", so that the BIP sought to redress the biased policies of the Mexican developmental state where manufacturing was centred around Mexico City (Goldfrank & Schrank, 2009, p.445).

> "Bermúdez hired ADL[16] to formulate a regional development plan (i.e., the BIP), lobbied the central government on behalf of the plan's adoption, encouraged his friends and relatives to take advantage of the plan and literally 'morphed his cotton fields into endless square miles of windowless, single-storey boxes packed with unseen workers' " (p.450).

Effects of industrial restructuring

Since the inception of the BIP and increasingly since the neoliberal turn in the 1980s and the NAFTA era, boosters have sought to promote Ciudad Juárez as a city of the future by inviting transnational corporations to invest in large manufacturing operations and position itself as an advanced node of global production systems/supply chains. However, this is operationalized through oppressive practices from transnational corporations and local elites. Thus, the rapid pace of transformation from hinterland to central node of global production has resulted in a relatively high degree of wealth creation but also a high degree of inequality and the consequences of such intensive industrialization practices can be linked to many of the problems that Juárez currently faces.

[16] Arthur D. Little, Inc. (ADL) is a United States-based consulting firm that has previously developed the "industrialization by invitation" model in Puerto Rico by promoting tax breaks, subsidies and low-cost labour to lure firms (Goldfrank & Shrank, 2009).

In this section, I demonstrate how the pursuit of industrial development has come at the cost of social and environmental justice in Ciudad Juárez and restricts other economic opportunities as a result. More specifically, I consider the following themes: the gendered division of labour and the implications for women, the socio-economic and spatial conditions of migrants, and the political economy of violence.

Gendered Division of Labour and the Implications for Women

From its roots as a religious settlement and cotton-producing region, Ciudad Juárez gained prominence during the American prohibition era (early 1900s) with a tourism industry centred around the availability of “free-flowing alcohol, nightclubs, and easy sex” (Wright, 2004, p.369). This reputation would disappear with the wave of intense violence that followed President Felipe Calderon’s election in 2006 and the subsequent war on organized crime. Wright (2014) notes that Ciudad Juárez was historically known for the role of women in two important parts of the economy, as sex workers and maquiladora labourers. Both have been targeted as these workers no longer align with efforts to lure foreign investment to the city. Sex workers were harassed by police as the city centre was seeking to gentrify and shake its reputation as a sin city, while violence against female labourers was met with indifference (Wright, 2014).

Wright (2001) documents efforts to rebrand Ciudad Juárez from a centre of low skilled and labour-intensive industry to a “high-tech value added city” (p.93). To achieve this, there is an erasure of the role of women in the maquiladora industry. Berndt (2003) notes

that maquiladora managers regard women as transitional and likely to assume traditional roles as mothers and wives, so that expenses for skilling are not worthwhile. Thus, a transition towards a highly skilled male workforce is marketed as better able to deliver more sophisticated manufacturing processes.

These trends are emblematic of the gender divides that have been reinforced and entrenched in Juárez's maquiladora-centred industrial orientation. It should also be noted that, from the mid-1990s onward, women have been killed with impunity to such a degree that feminists have adopted the term "feminicidio" when referring to the chronic violence affecting women and girls in the city (Martínez Prado, 2020).

The Socio-Economic Geography of Migrants

Migrants have contributed to the population surge in Ciudad Juárez for many reasons. Pull factors include media campaigns by the local Maquiladora Association and a desire for a better life (Berndt, 2013). As demonstrated in the previous chapters, they were also pushed by the state's failure to invest in rural areas. Yet, despite their vital contributions to the local economy, migrants are often not well received. Berndt (2003) notes that migrants from southern states are regarded as morally inferior in contemporary public opinion. In the maquillas, personnel managers prefer those who are born in Juárez and embody modernity over migrants that are seen as "backward" and "prone to illegal activities" (Berndt, 2013). In this way, the project of modernization doubly stigmatizes migrant women.

Further, this discourse lends itself to a depiction of southerners as a temporary presence seeking to establish themselves by squatting on land (Berndt, 2013). Weak state-bureaucratic regulation and supports have also contributed to this characterization as informal settlements have multiplied on the urban fringe. These settlements, identified as *Zonas de Atención Prioritaria* (ZAP) zones of priority attention, are often in high-risk areas around the hills of Juárez, and due to unplanned growth, are difficult to integrate into the urban region and are largely without adequate municipal infrastructure and services, e.g., health, education and housing. And while the informal settlements are mostly inhabited by migrants, they are also inhabited by indigenous peoples who have also been subject to social and economic exclusion. It has been found that communities with a high presence of speakers of indigenous languages were excluded from the CNCH strategy (Medel-Ramirez et al., 2016). At a visit to such a community (Kilometro 29), my guide Teresa Cavazos indicated an area even further removed from the fringe community as the location of a settlement of indigenous peoples. Their isolation was extreme and under these circumstances, low levels of participation of indigenous peoples in the formal economy is unsurprising.

At the same time, the under-development of these fringe (and extra-fringe) settlements must be contrasted with cases where government, in partnership with market institutions, have secured infrastructure outside of central areas when aiming to lure foreign investment (Berndt, 2013; Liverman & Vilas, 2006) – a trend that indicates a privileging

of capital over (socially and economically marginalized) classes and contravenes a people-centric development approach.

Figure 5. Location of Community of Kilometro 29 relative to Ciudad Juárez

Source: Google Maps.

The Political Economy of Violence

Since the 1990s, the region has become a site of high levels of violence. The United States has increased militarization of the southern border since 9/11. In Mexico, cartels have sought to control territory with ready access to American markets, resulting in high homicide rates in Ciudad Juárez, as shipping routes from maquiladoras provide opportunities to smuggle drugs North and weapons South. At the same time, the killing of women with impunity has highlighted the failings of the government to adequately respond to crises that continue to this day. While conducting focus groups with residents

in Ciudad Juárez in 2016, Manon et al. (2017) note that the major challenges facing participants include “drug violence, safety concerns and the high cost of living” (p.13).

The crisis situation can be traced to the economic profile of the region and neoliberal institutions that have cultivated it, and it has been further aggravated by developments in the first decade of this century. As the maquiladora economy is highly dependent on the US markets, the 2008 recession caused a downturn in production and left many unemployed. This followed on the heels of the food crisis of 2007 which destabilized many countries as world grain prices steeply increased. The food crisis was also preceded by a war on organized crime by the Mexican federal government with the election of Felipe Calderon in 2006. These cumulative shocks created conditions that found Ciudad Juárez at the centre of a wave of violence and the city’s institutions proved incapable of addressing the crisis.

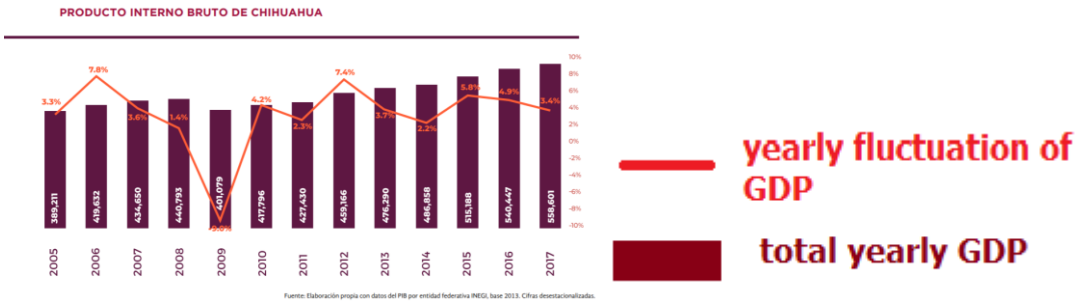

Figure 6. Gross Domestic Product of Chihuahua

Source: Plan Estratégico de Juárez, 2019.

The consequence of disappearing jobs, food crisis, punishingly low wages, underserved communities, alienation from the formal economy and the impunity that drives feminicidio has facilitated a drug economy that finds a logistical advantage in Ciudad Juarez. As

President Calderón's war on organized crime raged, tourism from neighbouring El Paso was driven to a halt and has yet to fully recover.[17]

Further, the lack of youth services in the city has left many vulnerable to recruitment. According to the director of the youth development centre in Juárez (CASA), Teresa Almada, at-risk youth in low-income areas are easily recruited by gangs because of their level of social exclusion (Burnett, 2009). During site visits, Teresa Cavazos recounted to me how neglected youth were easily recruited by criminal organizations as a means of survival, as children in certain neighbourhoods have limited access to emergency food sources and are undernourished (site visit, November 2016). With parents working long hours in the maquiladoras, it can be difficult to provide adequate care for children, even more so for migrant workers without a network of support. The CASA centre similarly attracts youth with meals and social activities, with focus group participants depending on CASA as their only source of a balanced meal. According to a study of food security published by the Food Trust, an NGO based in Philadelphia, focus group participants stated that they depended on CASA as their only source for a balanced meal (Manon et al., 2017). The study found that food insecurity was a "major concern for most participants in the focus groups", affecting low-income residents across the Paso Del Norte transborder region, (while) further exacerbated in Ciudad Juárez due to the poor coverage of "reliable safety net programs" (Manon et al., 2017, p.14).

Professor Granados-Olivas offers a broader analysis of the problems facing the city and country:

[17] Military units were called in to reinforce the police presence. However, both the police and military have been implicated in the drug trade.

> “They got rid of agriculture, they destroyed the economy, reducing the investment in education... That’s a bad combination. And everything comes from food. If you put it in perspective, it’s one of the biggest pillars of society. You ensure that your people have arts, poets, music, you have culture. Mexico has [had] a big culture in the past. So there's [sic] some bad decisions from politicians. And then corruption, drug dealers are all subsequent issues of bad policy” (Interview, October 2016).

Developing alternative food systems in Ciudad Juárez: An Overview of Key Challenges

This section reflects on the specific challenges and opportunities associated with the development of an alternative food system, drawing on fieldwork (interviews and site visits) through which some food system initiatives were explored. I begin by highlighting the general constraints that a border location presents for food production in Ciudad Juárez and then focus on three organizational issues that characterize current food system-related projects: challenges associated with collective forms of organizing; funding constraints; and the need—and potential—for overcoming the government-community divide.

Markets at the border

Food production for regional consumption is problematized by the international border for several reasons. First, due to the high concentration of manufacturing activities close to the border, land markets can be volatile, as industrial zones command a higher price than agricultural zones, which leads to increased speculation and a decreased motivation to invest in sustainable soil management. There is also the risk of illegal expropriation of this sought-after land, which is noted by Berndt (2013).

Border rules, imposed by the United States, also limit the ability for agricultural products to be shipped across unless they meet a certain threshold of industrial production. Similarly, purchasing programs[18] for public institutions are typically regulated and do not lend themselves to regional coordination across state lines (Regional Stakeholders Committee, 2009). Theoretically, if low-income people in El Paso were able to shop in Ciudad Juárez, their purchasing power and their ability to access healthy foods could be much greater. However, restrictions on the import of many items make this difficult, but not impossible. Yet, many of those who earn a relatively higher income in Ciudad Juárez can and do prefer to shop in El Paso due to the perceptions of higher food quality and safety of products from the United States. Mexico's food import regulations allow a wider variety of foods than their US counterparts, but limitations still impede the importation of many food products by individuals. By favouring US markets for healthy food options, the ability to generate alternative food systems in Ciudad Juárez is further constricted.

[18] Morgan (2008) identified public procurement as an important driver of sustainable food chains in London, UK through school food programs.

Nonetheless, Professor Alfredo Granados-Olivas affirms that there is an opportunity for a local market to thrive in Ciudad Juárez, as he sees a willingness of people to support local producers. I witnessed such a desire as farmers from nearby Samalayuca purchased ads on the radio and set up an informal stall in a city plaza, where many flocked to purchase zucchinis and tomatoes at prices below typical retail value. While this ephemeral market is by no means representative of a vibrant alternative food movement, it does illustrate the desire to consume local and affordable produce and support local producers.

Figure 7. Informal produce retail in the Plaza de San Lorenzo - photograph taken by author.

This example however also denotes a certain frailty. The challenge of developing an alternative food system in Ciudad Juárez can be linked *in part* to the prevalence of short-lived or informal initiatives that were documented during fieldwork. I emphasize 'in part' to acknowledge that the present food system regime and prospects for alternative pathways in Ciudad Juárez have been heavily conditioned by external political-economic forces, as highlighted in the previous chapter. The focus of the discussion here, however, is on the internal challenges. I now turn to a discussion of some of the key challenges that underpin the precarious and fragmented nature of the food system initiatives.

Challenges to Collective Organizing Initiatives

In further clarifying the state of alternative food system planning in Ciudad Juárez, Alfredo Granados-Olivas remarks that to gain the support of government officials, projects have to empower citizens to be self-sufficient, as budgets are tight and the optics of a popular initiative are lauded only once they are successful:

> "As long as you empower people and show them, educate them [on] how to solve their own problems, politics will always look back [favourably]. Politicians will like a good successful story that doesn't cost them. So that's a good competitive advantage for people who are organized" (Interview, October 2016).

Professor Granados-Olivas has worked to engage fellow agricultural workers in the rural areas around Ciudad Juárez to improve their practices and promote a food system that is more beneficial for them. As an organizer, he seeks to educate and organize farmers to promote projects that offer mutually-beneficial outcomes and "cut out the middlemen" that profit from a lack of coordination among farmers in Chihuahua. This is no small feat, as farmers have often been disenfranchised by private sector initiatives and failed government programs and are wary of associations that rely on bureaucratic and legal systems.

He gives the example of organizing to improve the herd genetics for better lamb production. Farmers were trained through a non-profit organization, Heifer International, that sought to bring in new breeds with better commercial viability, but the project never materialized as funding was cut. Heifer International is a United States-based organization that operates globally to support small-scale farmers. The project aimed to have farmers share livestock to improve genetics throughout the farming community, however only a small number of farmers chose to invest in the new breeding program when funding fell through and were thus under no obligation to share their new breeds with those that abandoned the project due to the lack of funding. The failure of the organization to implement the project further atomized the farming community, reinforcing perceptions that an effort to improve their livelihoods through institutional collaborations was not a viable course of action.

Another effort to organize farmers around a common agenda was the creation of a non-profit intermediary through which the farmers, by operating in coordination, could command a higher price for their lambs by eliminating for-profit intermediaries within the food chain. Professor Granados-Olivas characterized the project thusly: “get organized so we can download projects on to our members to get organized to get better prices directly from the buyer” (Interview, October 2016). However, many farmers hesitate to buy into the non-profit system. Payments are withheld while the non-profit intermediary completes transactions, so it can take a few weeks for farmers to receive payment, whereas for-profit intermediaries offer immediate, though smaller, returns. In a context

where trust in institutions is limited by past experiences and resources are scarce, it can be difficult to build capacity for non-profit intermediaries.

Challenges to Securing Funding

The challenges to securing funding for novel projects, as well as basic services, also contribute to the lack of organizational capacity in Ciudad Juárez. In 2016, the city was facing a budgetary crisis which resulted in massive layoffs as a new mayor entered office. Professor Granados-Olivas stated that there were “380 bureaucrats that knew how things work and they got kicked out because they didn't have money to pay them” which resulted in a diminished capacity of city services. As an independent, the mayor, Armando Cabada Alvídrez, has stated that the layoffs were not the result of “revancha politica” (political revenge), which is typical when administrations oscillate between the PAN and PRI political parties, but rather an attempt to weed out corruption (Castañón, 2016).

However, Chihuahua’s gubernatorial elections of the same year, where the PRI incumbent was defeated by a PAN candidate, did result in layoffs that are typically associated with ‘political revenge’. A site visit to a State-owned greenhouse in Ciudad Juárez illustrated this phenomenon succinctly. The greenhouse, operated by JMAS (State Water and Sanitation), was full of plants that were intended for distribution to communities across the city. However, the project was cancelled with the change of State government,

so that these plants were left to die (Figures 9 & 10). The site was later used to host community botany courses on Saturday mornings (Figure 11).

Teresa Cavazos, the woman previously in charge of the JMAS greenhouse, has resorted to creating her own space for plant propagation. As a result of the inability of the government to follow through with the urban agriculture project she had overseen under the previous administration, she uses a small plot of land in the central city to grow various species of plants and shrubs. In 2016, she was looking to start an initiative that would be self-sustaining and not beholden to electoral politics. She continued to maintain connections with communities that had participated in the JMAS urban agriculture projects, checking in on their gardens and sharing her knowledge with growers on the urban periphery. And the community benefits of such linkages are significant. At a Comedor Comunitario, for instance, I was introduced to several youths who were taking advantage of the discounted, healthy meals provided at the centre—similar to what was observed above for CASA. These initiatives thus demonstrate the potential of government programs—if adequately supported—to assist in developing community food security, empowering locals by providing avenues for participation and giving them agency within their local food system.

Figure 8. Peri Urban garden - photograph taken by author.

Figures 9 & 10. Wilting plants at abandoned JMAS greenhouse - photographs taken by author.

Figure 11. “Jose Fernando and Mariano came with their mom to the JMAS greenhouse” Source: Gamboa, 2016.

Unbeknownst to Teresa, a similar project had already taken root in Ciudad Juárez two years before hers: a group called “Red de Huertos” (Network of Gardens), managed by interviewee Daniel Delgadillo. The group has been active since 2014, working with youth from community centres. The group is informal and the members work on private parcels of land but share the workload, their knowledge and yields. The group hoped to develop long-term projects but lacked a permanent location on which to build the necessary infrastructure to expand. Daniel mentioned that they would like to process and store compost, collect rainwater, host workshops, and establish a seed bank, among other initiatives. He lamented the group’s lack of resources while citing several organizations that could support their initiative at the municipal and state level. However, he did not apply to access funds or know of any organizations that could help direct them towards funding to advance their goals.

This phenomenon had been previously discussed during a conversation with Professor Granados-Olivas where he mentions that “people don’t know how to bring down the resources from different programs, people don’t know about those projects. There’s funding at the federal level”. It may not be enough to be organized and achieve political visibility if the ability to navigate the bureaucracies to tap into funding opportunities and scale-up projects is lacking.

On the Need – and Potential – to Bridge the Government-Community Divide

Professor Granados-Olivas also discussed the ineffectual work of the government on projects of a similar nature. For example, on the subject of a particular urban agriculture initiative promoted by SAGARPA and SEMARNAT that aimed to provide a sustainable source of eggs for community members, he states:

> “It completely failed. The government brought money, hired engineers, but they did not compromise with society and it broke. They gave them chickens and they just ate all the chickens” (Interview, October 2016).

What is remarkable from this example, as well as the preceding ones, is the lack of cohesion and coordination between civil society and the state. And yet, organizations in Ciudad Juárez do exist that have identified this problem and that seek to bridge the gap. I was able to investigate an initiative brought forth through collaborations between a

community group, Plan Estrategico Juárez and several local and regional institutions, which illustrates the potential.

A green infrastructure project in the Valle Del Sol neighbourhood was created to address flash flooding and act as a catchment area for rainwater. The project was brought to my attention by Plan Juárez, a community organization, funded in large part by the US Embassy in Ciudad Juárez, that links community members with decision-makers in the municipal government to fund community beautification projects, through a platform called “Red de Vecinos” (Network of Neighbours). In collaboration with the BECC, and the Instituto Tecnológico de Ciudad Juárez (ITCJ), the pilot project aimed to reduce flooding using watershed restoration techniques and sought to engage the community in the project, who would be charged with site maintenance.

Figure 12. Valle Del Sol green infrastructure project - photograph taken by author.

The project met the objectives of the participant organizations. The BECC met its mandate of providing funds for green infrastructure projects in the border area, and the Red De Vecinos succeeded in implementing a beautification project through citizen participation.

The ITCJ was able to research and assess the functional capacity of the design, by measuring flora and water catchment, etc. According to Diego Sandoval, project leader for the ITCJ: “It is a project to learn. Learning because it is first. Let's learn lessons, let's study all the variables”. Through scientific study, he hopes that the project can gain legitimacy and be adopted as a method to address seasonal flooding problems citywide.

This project succeeded through the sustained efforts of community members and local professors. It benefitted from a clear goal that fell under the purview of several institutions that were able to provide both financial and technical support. The success of this project speaks to the skillful ability of its leaders to address a specific issue, identify resources whose mandates aligned with the project and to assemble a community around a common goal.

Professor Diego Sandoval concludes that the project was a great opportunity to combine the knowledge and skill of a lot of different people and one that benefited from actors that could mediate government-community connections:

> “The city has knowledge, the neighbors have knowledge, but [these projects] need an expert who has more knowledge than they do and who can integrate it… And the institutions like us [ITCJ], are among those that coordinate that. We are the ones that do it, that make it flow. We coordinate everything.” (Interview, December 2016, my translation)

According to Professor Diego Sandoval, the limited ability to apply for funding and implement projects is a reality in Ciudad Juárez. While there is no shortage of funding opportunities, what is lacking are those who can start projects, navigate the bureaucratic system and draft funding proposals to gain access to a diversity of funds (rather than being dependent on one source). Professor Alfredo Granados-Olivas offers a similar analysis:

> “There is something broken here. Governments would like to be there. People don’t know how to bring down the resources from different programs. But then again if you know that, if there is someone intelligent that reads the terms on how to submit a project, you still have to go to the municipal government so he [sic] can approve that, so you can get the funding... But [the government] won't do the initial thing for this. Getting this funding and getting people organized comes first” (Interview, October 2016).

A project with clearly defined goals and sustained interest from the community and local professionals can be successful, as the project in the Valle Del Sol illustrates. Through this success, Diego Sandoval hopes that similar projects can be reproduced across the city. By gaining bottom-up legitimacy, such projects can motivate government officials to allocate resources and acquire political recognition. This could also strengthen inter-institutional collaboration and tap into the wealth of technical expertise throughout the city.

Professor Granados-Olivas believes these projects have the potential to “break a paradigm” (my translation) by involving citizens in the process of creating resilience in their communities. The paradigm here represents the cycle of electoral politics that seeks to influence voters through “buying votes” by giving them dispensas (emergency food packages), which creates a cycle of clientelism and dependency. By giving citizens more agency, he believes that efforts to build self-sufficiency would be better received. Perhaps they would not simply eat the chickens, as mentioned earlier, and would instead wait for eggs, if they did not assume that there would be more gifts during the next electoral cycle. Martinez (2017) brings this criticism to the network of Comedores Comunitarios, where poverty alleviation must seek to move beyond “waiting for a benefit from the government itself in exchange for clientelist networks of political support (my translation)” (p.41). Building trust within communities is fundamental to the implementation of programs that require engagement.

In Ciudad Juárez, efforts to promote urban agriculture and urban greenspaces are being put forward by community groups (Red de Huertos, Red de Vecinos), the State and Federal government (JMAS and SEMARNAT, SAGARPA, respectively) and local institutions through key actors (Diego Sandoval - ITCJ, Alfredo Granados-Olivas - UACJ, Teresa Cavazos - JMAS). Many interviewees have a background in agronomy, including Carlos Rincon (EPA), Teresa Cavazos (JMAS), Daniel Delgadillo (Red de Huertos) and Professor Granados-Olivas (UACJ). What seems to be lacking is a coordinating body that could direct engaged citizens to resources and provide financial and technical support in the long term and, at the same time remain at arm’s length of government to avoid the

ephemerality of projects that are linked to political parties and administrations that change every few years.

Chapter 5. Prospects for Regional Coordination

Apart from shedding light on the state of local initiatives, the findings from the fieldwork analysis suggest a role for a coordinating body in Juárez to engage and link-up institutions operating at a *regional*, as well as local, scale. As noted above, a transborder *market* for alternative food systems is lacking, however, there are signs that a regional food system planning initiative could develop through other means. Material goods and people may be impeded by the border, but other resources remain mobile and offer avenues for coordination. The case of the Paso Del Norte offers several avenues for intervention and may be able to draw on the strengths of its constitutive parts. A closer look at the context and food planning initiatives on the United States side of the Paso Del Norte can shed greater light on this prospect.

As with the case of Mexico, food planning challenges in the United States abound and for the United States communities of Paso Del Norte, regional disparities are present. It is estimated that 27% of the region's population "lives at or below the poverty level, more than double the US national average, and significantly higher than Texas and New Mexico" as a whole (Regional Stakeholders Committee, 2009, p.6). Manon et al. (2017) have identified that food security remains an issue for many households, with obesity, malnourishment and access to fresh produce being areas of concern. To respond to these issues, community organizations in the United States have sought to collaborate to support the development of a sustainable food and farm system and to promote improved

nutritional outcomes, and these organizations could serve as key partners for a nascent regional system.

In New Mexico, the Las Cruces region benefits from the support of La Semilla Food Center, a local institution embedded in the community with a network of rural agricultural actors, that have shown themselves capable of articulating a vision for a regional AFS by focusing on the needs of producers, retailers and consumers. Through the Mesilla Valley Food Policy Council and other initiatives, they have submitted several State policy recommendations and succeeded in shaping State food sovereignty policies[19]. They rely on obtaining grants and have forged partnerships with schools to maintain their operations (Interview with Krysten Aguilar, November 2016). Their vision is one of food sovereignty that is embedded in agricultural practice and community engagement.

El Paso, through the Paso Del Norte Health Foundation (PDNHF), is served by a stable and well-funded organization with experience working with community groups on both sides of the international border. They benefit from financial stability and a highly competent team with the autonomy to pursue their mandate of improving health outcomes. They have funded several initiatives in the Paso Del Norte, including projects in Ciudad Juárez and even providing grants to La Semilla Food Center. However, food policy councils (FPCs) in El Paso have twice failed to take off through a top-down

[19] Initiatives to allow SNAP recipients (food subsidies for low-income people) to purchase fresh produce at farmer's markets, and to develop local food procurement policies by governments and institutions were discussed with Food Planning and Policy Coordinator Krysten Aguilar Interview, November 2016).

approach[20] (Interview with Leah Whigham, December 2016). The initiatives put forth have tended to focus on mitigation of the negative effects of the Conventional Food System, proposing individual actions for healthy lifestyles and market-led approaches, such as reducing geographic distance to supermarkets or food waste recovery.

Dalhberg (1994) has noted that measures such put forward by PDNHF "negatively affects the longer-term success of a FPC" by reinforcing approaches that tend to create a system of dependency rather than one of empowerment, whereas FPCs that seek to promote more transformational AFS initiatives to address the structural barriers that are the cause of food insecurity have persisted (p.10). This same phenomenon has been observed with the Comedores Comunitarios in Mexico.

The Comedores Comunitarios program, a federal food security initiative with food sovereignty aspirations, held a function as an intermediary. Through the establishment of an oversight committee appointed through a community assembly, the Comedores Comunitarios were to interface with government bodies to direct community investments. However, community recommendations were reportedly not implemented by government representatives. The inter-ministerial collaborations that were meant to reduce the dependency of vulnerable peoples on State interventions failed to implement the self-sufficiency measures that could benefit a food sovereignty movement.

[20] A 2016 resolution from El Paso city council calling for a Food Policy Council failed to gain traction as did another initiative that centred around actors from the local food bank, El Pasoans Against Hunger.

Thus, A FPC could draw from a broad coalition of actors in the region that are knowledgeable and actively working towards improving various components of local food systems. Such a coordinating body could be a vector for the incubation of AFS initiatives, which, when successful, can create political capital and develop networks that engage actors from the community and those in the political sphere, further legitimizing the organization and strengthening state-society connections at different scales.

Leveraging the institutional capacity of existing institutions in the Paso Del Norte region could act as a catalyst for the development of a coordinating body within Ciudad Juárez. There is a need to coordinate efforts to strengthen the Ciudad Juárez initiatives to bolster its position in the region, for a more active role, so as not to reproduce colonialist projects of dependence or the clientelistic patterns of program delivery that have hitherto stunted the development of a robust Alternative Food System.

Analysis

Ciudad Juárez and the Paso Del Norte region has been shaped by the broader historical, political and economic regulatory context in the United States and Mexico, and the prospects for AFS coordination have been conditioned by these factors. The legacy of the Mercantile-Industrial Food Regime contributed to an international division of labour that positioned the United States as a major exporter of grains, which accelerated industrial transformation in developing nations at the cost of their food sovereignty,

dismantling peasant agriculture and inducing proletarianization by undercutting domestic food production. The situation in Mexico was unique however due to the inalienable right to land secured through ejido land tenure that was achieved during the Mexican Revolution. While production was undercut by cheap American maize, proletarianization has not been fully achieved.

As ejidatarios are not easily incorporated into the functions of the modern capitalist state system, they are pressured to forgo their lands or are excluded through regressive policies. The state apparatus, operating through institutions, simultaneously seeks to promote market-led modernization while supporting a peasant population that is resistant to proletarianization and potentially prone to a retreat to subsistence. Thus, in this context where the power of elites is not sufficiently challenged, the political structure devolves into clientelism where symbolic investments are metered out to ensure the continuation of the status quo.

Evans (1995) explains that services require a competent bureaucratic apparatus: “[e]ven Mexico, keeping Conasupo... from being consumed by the clientelistic tendencies of the PRI regime has been a constant struggle” (p.237). Indeed, the conditions under which the developmental state in Mexico operated through CONASUPO reflect a regional bias towards the ‘modern and urban’, where the proletariat resides. Such biases were also demonstrated by the SAM program for national food sovereignty, where investments were prescribed by a bureaucratic apparatus that was ill-equipped to address the regional specificities of the peasant communities and their traditional agricultural practices. There

is thus an asymmetrical relationship built into the Mexican political system between modern and traditional economies. This asymmetry has been exacerbated by trade liberalization and export-oriented development policies associated with a neoliberal turn, with serious repercussions for the border city of Ciudad Juárez. The city operates according to the needs of the maquiladora industry, which in turn operates according to the needs of foreign capital and local elites. The conditions that have allowed the industry to thrive have also resulted in difficult living conditions for many of its citizens.

Consequently, the tension between modernity and tradition also plays out at the local scale. Modernity embodied by a high skilled male worker from the North is imagined as contrary to the low skilled female worker from the indigenous South. As Berndt (2013) demonstrates, this division is “a performative effect of heterogeneous networks that assemble diverse actors” where ‘modern’ roles are exalted and ‘traditional’ roles are demonized by agents of an urban growth coalition that seek greater centrality in global manufacturing networks (p.2650).

The ‘performative effect’ of valorizing manufacturing also devalorizes the social reproduction that is a necessity of it's proper functioning. The ‘modern’ downplays its reliance on the ‘traditional’. The city downplays the roles of women as the original maquiladora labourers and the important contributions of sex workers to the tourism industry as it seeks to project an image of modernity (Wright, 2001). The outcome of this project of fetishizing the ‘modern’ has resulted in a breakdown of social structures and a crisis of violence.

Alternative Food System (AFS) Planning offers a counter-narrative that recognizes the value of the 'traditional' work of social reproduction as necessary inputs to production and stabilization of social structures. The performative effect of urban agriculture, community dining rooms, school cooking classes, farmer's markets, etc., makes visible the role of food systems, a 'traditional' economic activity, in the 'modern' economy. Importantly, it also makes visible the role of women, who are primarily responsible for meeting the needs of social reproduction in households in Mexico.

However, the performative effect of AFS initiatives alone will likely not be sufficient to reform state-society relations. The reduction of social and geographic distance that AFS can induce may offer opportunities to activate new collaborations between the State and locally-based groups. According to Evans, (1995):

> "A more institutional perspective suggests that the organization of subordinate groups may be an important bulwark against a degeneration of narrowly focused state-society connections into an elite clientelism that is ultimately more threatening to development" (p.246).

This reflects Professor Granados-Olivas' prognostication that developing AFS initiatives which activate communities' capacity for self-sufficiency and create opportunities for the building of new state-society connections may help "break the paradigm" of clientelism and dependence on state intervention.

The clientelistic nature of service delivery was a recurring theme during fieldwork. This research has found that top-down, government programs in Mexico tend to limit the life of projects to electoral cycles, curbing expectations and contributing to a climate of cynicism towards public institutions. Resources tend to be more readily available in areas that have supported the ruling party, or during election periods. Fox (1991) identifies a difficulty with selective subsidy deliveries in Latin America which are often channelled towards “powerful social groups in exchange for political or economic rewards” instead of the intended groups (p.211). The manufacturing sector and large agricultural producers have been identified here as such powerful groups.

The delivery of targeted assistance to those most in need of developmental assistance must then challenge existing structures and encourage equitable and efficient service delivery. Fox (1991) suggests that democratic local organizations are best suited to organize beneficiaries themselves, acting as development ‘intermediaries’.

As a case in point, Evans (1995) points to Kerala, India where land reform was achieved through extensive mobilization. Peasant’s associations dismantled the old landlord class, created a class of peasant proprietors and secured rights to landless labourers. Kerala now performs much higher than the rest of India in terms of health, education and infrastructure, but this is not due solely to their highly mobilized constituents. These groups cannot “by themselves deliver the reforms and services they have fought for, no matter how militant they might be”; what is required is an administrative apparatus (Evans,

1995, p.236). In other words, the embeddedness of the peasant's associations of Kerala is coupled with the "relatively well developed bureaucratic autonomy" of India to deliver a competent administrative apparatus that is held in check by highly mobilized citizens, ensuring that fraud and bureaucratic misbehaviour is not tolerated (p.237).

This example demonstrates that while mobilization is important, just as the performative effect of AFS is important, an autonomous administrative apparatus is also necessary to ensure the proper provision and functioning of services. Piecemeal AFS initiatives alone will not result in a reform of the state-society divide. A coordinating body could prove beneficial to actors engaging in AFS planning by working to bridge that divide, overcome the fragmentation of existing initiatives and encourage alternative economic development pathways that challenge the dominance of manufacturing and corporate agribusiness, for whom the state has shown itself to be a capable collaborator.

There are many variables to consider and potential points of entry when seeking to reorient food systems towards sustainable and socially just alternatives. A wealth of engaged and technically proficient actors are actively working towards developing AFS initiatives in Ciudad Juárez, including several affiliated with academic institutions (UACJ, ITCJ). Furthermore, the city's historical context as an agricultural region has not completely vanished, cotton fields and peri-urban farms are still present and many citizens have migrated from rural areas, bringing with them agricultural knowledge that could be reactivated.

While Ciudad Juárez does not presently have a food policy council (FPC), it does have an institution that acts as a coordinating body for its communities that prefigures a council model. Plan Estratégico Juárez, through programs such as Red de Vecino, seeks to improve the fractured relationship between civil society and the state. The organization acts as an intermediary by facilitating coordination between citizens and elected officials. However, their scope is limited to Ciudad Juárez and their interventions tend to reflect traditional planning roles, such as infrastructure and beautification projects. Nonetheless, the case of Valle Del Sol is an example of bringing together a variety of skills to create a project that demonstrates the potential of *community-led* developments.

A resource dedicated to expanding the AFS may allow for better networking and coordination among interested parties and present opportunities to foster alternative economic development pathways. This research has found that piecemeal and isolated projects in Ciudad Juárez are indicative of actors that operate in a limited network, sometimes unaware of potential supports or similar projects or the potential to connect institutions within the broader region of Paso Del Norte. Nonetheless, the focus on food production and the highly skilled actors operating in the area offer a strong foundation on which to build a bottom-up Food Sovereignty movement.

Chapter 6. Conclusion

The Paso Del Norte exhibits a high degree of polarization. The relative safety and affluence of Las Cruces and El Paso is contrasted with the rural poverty of the surrounding counties and with that of Ciudad Juárez. Ciudad Juárez's integration into a high tech North American manufacturing complex and the large agriculture producers of Northern Mexico are contrasted with the subsistence farmers and labour-intensive manufacturing that is typical of Southern Mexico. Some of the mechanisms that produce these inequalities have been discussed here.

Food is broadly recognized as a right and has been actively supported by all administrations mentioned herein. Unfortunately, those supports have been unevenly distributed and subject to a market logic that has allowed the corporate food regime to continue to consolidate power within the conventional food system. Shamah-Levy et al. (2017) have found that Mexico's agrarian structure remains markedly unequal and its agro-industrial sector is undergoing "acute oligopoly problems that threaten the entire agro-industrial chain and food security as a whole", as policy is fragmented and does not link food security programs to economic development (p.76).

Food—as a basic need and fundamental element of the social reproduction required to participate in a society's economy—has the potential to narrow the growing socioeconomic gap and should be considered an essential component of any development strategy. Yet, decades of market-centric policies have led to a commodification of food and price volatility that creates barriers to access for vulnerable peoples. State retrenchment combined with fragmented and ephemeral policy has

created gaps in the social safety net. At this moment, there is the potential to rally community groups and local actors around a Food Sovereignty movement to promote AFS to localize, diversify and democratize food economies.

In some contexts, FPCs have emerged as a coordinating body. Some advantages are integrated autonomy, political power, and a role as non-profit intermediaries to promote food sovereignty initiatives. This is a new idea emerging in the global North, but these ideas have been around in Mexico for some time. *Soberania alimentaria,* the original iteration of a food sovereignty initiative was first conceived as part of the Programa Nacional de Alimentación (PRONAL), which succeeded the Sistema Alimentario Mexicano (SAM) aka Mexican Food System in the 1980s. Further, CONASUPO's omnipresence in the food system demonstrated a capacity for state intervention but also a failure to address the complexities of a heterogeneous food system. Its proximity to political elites and top-down approach dulled its effectiveness. A bottom-up approach may be more effective. So the question is how to channel resources to bring institutions together to lobby and return to the traditional institutional form. Because actors are looking for something that is autonomous, more long-term, more sustainable, this seems to suggest the need to recover this intermediate form of organizational support, but on a scale that is locally accountable.

Evans' (1995) study of the pathways towards forging a competent and benevolent state structure capable of enacting industrial transformation has parallels here. The food sector is increasingly understood as one with great potential for regional economic development

(Friedman, 2007). The sensitivity to community needs and interests that come from an embeddedness in those same communities coupled with autonomy and support from the state, offers FPCs a perspective and flexibility to achieve development goals that are uniquely suited to their local or regional context. From Evans, (1995):

> "Expanding the scope of state-society links to include a broader range of groups and classes, however difficult that might be to accomplish, should result in a more politically robust and adaptive version of embedded autonomy" (p.22).

Of course, regional efforts must be coupled and enabled by national support. Shamah-Levy et al. (2017) recommend that a shift towards a national Mexican strategy that incorporates food security and sustainability of the food supply chain be advanced by promoting specialized cooperation between ministries through an overarching coordinating body that can be monitored by civil society organizations. The Presidency of Andrés Manuel López Obrador has signalled a renewed interest in food sovereignty. The merger of DICONSA and LICONSA into SEGALMEX (Seguridad Alimentaria Mexicana, Mexican Food Security) and a renewed program of price supports indicate that there may be an opportunity to develop such supports in the present moment.

If such a body were to be put in place, a regional FPC could be a step towards building a capacity for oversight. Of course, Mexico has a long history of activism. The Mexican peoples of the southern states have retained and refined a grassroots organizational

capacity, however it has “not been sufficiently consolidated to sustain a more confrontational approach at the national level” (Fox, 1991, p.225).

This study has sought to shed on the ongoing efforts to promote food sovereignty in Ciudad Juárez and the Paso Del Norte and contribute to research on the institutional basis for alternative food system planning. The study was limited by the limited number of interviews conducted with bureaucrats, which may have been linked to the shifting political landscape during the fieldwork period. Language and cultural barriers may have also posed a challenge as I am not a native Spanish speaker and may have missed opportunities due to a lack of familiarity with customs in the academic and bureaucratic spheres.

However, the objective is to present a preliminary analysis of the historical precedents and ongoing challenges and opportunities to secure the provision of healthy food in the region, particularly for those most vulnerable, with the hope that further analysis can extend the exploration of food planning futures in Ciudad Juárez and the Paso Del Norte, more generally. This study could be expanded to other cities along the United States/Mexico border to explore a wider phenomenon of AFS initiatives in transborder regions. Nogales, Mexico and Nogales, USA for example have developed food system planning initiatives as the border cities are situated along shipping routes for Mexican produce entering the United States. There is also potential to explore opportunities for coordination of AFS initiatives between regions within Mexico. As Born and Pucell (2006) have demonstrated, the focus on local or regional initiatives cannot de facto be socially

just. Rather, variables at other scales must be considered (e.g., local oligopolies are not better than international fairtrade). Thus, consideration for the Mexican farmers from the less developed South should also be considered in efforts to promote an AFS model that considers the socioeconomic needs of Mexico's most vulnerable as well as the environmental limitations of the country's various bioregions and their ability to develop sustainable food systems.

Key lessons for alternative food planning in Ciudad Juarez	
Obstacles	Potential for success
Lack of communication between organizations	Opportunity to invite collaborations
Technocratic revolving door	Many skilled practitioners
Privileging of special interests	Building political power through grassroots initiatives
Lack of confidence in public institutions	Opportunities for public engagement and
Focus on immediate food security	Developing food sovereignty initiatives

Table 1. Key lessons for alternative food planning in Ciudad Juarez

Bibliography

Allen, P., FitzSimmons, M., Goodman, M., & Warner, K. (2003). Shifting plates in the

agrifood landscape: the tectonics of alternative agrifood initiatives in California. *Journal of Rural Studies, 19*(1), 61-75.

Allen, P. (2010). Realizing justice in local food systems. *Cambridge Journal of Regions, and Society, 3*(2), 295-308.

Austin, J. & Fox, J. (1987). State-owned enterprises as food policy implementors. In J., Austin, & Esteva, G. (Eds). *Food Policy in Mexico: The Search for Self-sufficiency*. (pp. 61-91). Ithaca, NY: Cornell University Press.

American Planning Association. (2007). Policy guide on community and regional food planning. Retrieved from https://www.planning.org/policy/guides/adopted/food.htm

Atkins, P., & Bowler, I. (2001). Food Régimes as an organizing concept. Food in Society: Economy, Culture, Geography, 23-36.

Araghi, F. (2000). The Great Global Enclosure of Our Times: Peasants and the Agrarian Question at the End of the Twentieth Century. In F. Magdoff, J. B. Foster & F. H. Büttel, (Eds.). *Hungry for Profit: The Agribusiness Threat to Farmers, Food and the Environment. (pp.145-160).* New York: Monthly Review Press.

Araghi, F. (2010). The End of 'Cheap Ecology' and the Crisis of 'Long Keynesianism'. *Economic and Political Weekly*, 39-41.

Avalos-Sartorio, B. (2006). What can we learn from past price stabilization policies and market reform in Mexico?. *Food Policy*, *31*(4), 313-327.

Babb, S. (2001). *Managing Mexico*. Princeton, NJ: Princeton University Press.

Barkin, D. (1987). The end to food self-sufficiency in Mexico. *Latin American Perspectives*, *14*(3), 271-297.

Berndt, C. (2003). The Negotiation of Identities, Power and Space: An Investigation of Selected Maquiladora Plants in Ciudad Juárez, Mexico. *Area Studies, Business and Culture: Results of the Bavarian Research Network Forarea, 12,* 303- 315.

Berndt, C. (2013). Assembling market b/orders: violence, dispossession, and economic

development in Ciudad Juárez, Mexico. *Environment and Planning A, 45*(11), 2646-2662.

Born, B., & Purcell, M. (2006). Avoiding the local trap: Scale and food systems in planning research. Journal of planning education and research, 26(2), 195-207.

Brinkley, C. (2013). Avenues into food planning: A review of scholarly food system research. *International Planning Studies*, *18*(2), 243-266.

Burnett, J. (March 24, 2009) Mexican Drug Cartels Recruiting Young Men, Boys [Radio Program] In *Morning Edition*. Washington, D.C: National Public Radio.

Campbell, M. C. (2004). Building a common table: The role for planning in community food systems. Journal of Planning Education and Research, 23(4), 341-355.

Canby, P. (2010). Retreat to subsistence. *The Nation*, 5, 30-36. Retrieved from https://www.thenation.com/article/archive/retreat-subsistence/

Castañón, A. (2016, Octubre 21). Despidos en Municipio no son por revancha política: Cabada. *El Diario de Juárez*. Retrieved from https://diario.mx/Local/2016-10-21_688fe377/despidos-en-municipio-no-son-por-revancha-politica-cabada/

Chand, R. (2008). The global food crisis: causes, severity and outlook. *Economic and Political Weekly*, 115-122.

Clapp, J. (2014). Financialization, distance and global food politics. *Journal of Peasant Studies*, *41*(5), 797-814.

Classens, M. (2015). The nature of urban gardens: toward a political ecology of urban agriculture. *Agriculture and Human Values, 32*(2), 229-239.

Conceição, P., & Mendoza, R. U. (2009). Anatomy of the global food crisis. *Third World Quarterly*, *30*(6), 1159-1182.

Consejo Nacional de Evaluación de la Política de Desarrollo Social (2010). Informe de evolución histórica de la situación nutricional de la población y los programas de alimentación, nutrición y abasto en México. *Consejo Nacional de Evaluación de la Política de Desarrollo Social*. México, DF. Retrieved from https://www.coneval.org.mx/rw/resource/coneval/info_public/PDF_PUBLICACIONES/Evolucion_Historica_050411.pdf

CONEVAL (2014a) Diseño de la evaluación de la coordinación interinstitucional de la Cruzada Nacional contra el Hambre. *Consejo Nacional de Evaluación de la Política de Desarrollo Social.* Ciudad de México. Retrieved from *https://www.coneval.org.mx/Evaluacion/ECNCH/Documents/Resumen_ejecutivo_Coordinacion_Interinstitucional_270715.pdf#search=Cruzada*

CONEVAL (2014b) Análisis Exploratorio De Los Comedores Comunitarios. *Consejo Nacional de Evaluación de la Política de Desarrollo Social.* Ciudad de México. Retrieved from *https://www.coneval.org.mx/Evaluacion/ECNCH/Documents/RESUMEN_EJECUTIVO_COMEDORES_280715.pdf*

CONEVAL (2016) Balance De La Cruzada Nacional Contra El Hambre 2013-2016 *Consejo Nacional de Evaluación de la Política de Desarrollo Social*. Ciudad de México. Retrieved from https://www.coneval.org.mx/Evaluacion/ECNCH/Documents/Balance_Cruzada_2013_2016.pdf

CONEVAL (2018). Diagnóstico de productividad y análisis de los avances del Programa para Democratizar la Productividad 2013-2018. *Consejo Nacional de Evaluación de la Política de Desarrollo Social*. Ciudad de México. Retrieved on 2019-12-15 from https://www.coneval.org.mx/Evaluacion/IEPSM/Documents/Estudios_diagnosticos_2018/Diagn%C3%B3stico_productividad_2018.pdf

Dahlberg, K. (1994, June). Food Policy Councils: The experience of five cities and one county. In *Joint Meeting of the Agriculture Food and Human Values Society and the Association for the Study of Food and Society, Tucson, AZ.*

Dahlberg, K. (2001). Democratizing society and food systems: Or how do we transform modern structures of power?. *Agriculture and Human Values,18*(2), 135-151.

Daniel, F. J., & Eschenbacher, S. (2019, February 21). *How Pemex 'destroyed' $1 Billion with Erratic Business Choices*. Reuters. Retrieved from https://www.reuters.com/article/us-mexico-oil-pemex-audit-idUSKCN1QA30Q

De Ita, Ana. 2006. “Land Concentration in Mexico after PROCEDE.” In Promised Land:

Competing Visions of Agrarian Reform, edited by Peter Rosset, Raj Patel, and Michael Courville, (pp. 148–64). Oakland, CA: Food First Books.

Donald, B., & Blay-Palmer, A. (2006). The urban creative-food economy: producing food for the urban elite or social inclusion opportunity?. *Environment and Planning A, 38*(10), 1901-1920.

Durand, J. (2007). The Bracero Program (1942–1964): A Critical Appraisal. *Migración y desarrollo*, *2*(2), 25-40.

England, K. V. (1994). Getting personal: Reflexivity, positionality, and feminist research. *The professional geographer, 46*(1), 80-89.

Edelman, M. (2014). Food sovereignty: Forgotten genealogies and future regulatory challenges. *Journal of Peasant Studies, 41*(6), 959-978.

Evans, P. B. (1995). *Embedded autonomy: States and industrial transformation*. Princeton, NJ: Princeton University Press.

Environmental Protection Agency (2015). *La Paz Agreement.* Retrieved from https://www.epa.gov/sites/production/files/2015-09/documents/lapazagreement.pdf

Feagan, R. (2007). The place of food: mapping out the 'local' in local food systems. *Progress in Human Geography, 31*(1), 23-42.

Feenstra, G. W. (1997). Local food systems and sustainable communities. *American Journal of Alternative Agriculture, 12*(1), 28-36.

FAO. (2016). The State of Food And Agriculture. Climate change, agriculture and food security. Rome, IT: Food and Agriculture Organization of the United Nations. Retrieved from http://www.fao.org/publications/sofa/2016/en/

Fox, J. A. (1991). Popular Participation and Access to Food: Mexico's Community Food Councils. In S. Whiteford, A. E. Ferguson (Eds), *Harvest of Want: Hunger and Food Security in Central America and Mexico,* (pp. 209-241) Boulder, CO: Westview Press.

Friedmann, H. (1982). The political economy of food: the rise and fall of the postwar international food order. *American Journal of Sociology, 88*, 248-286.

Friedmann, H., & McMichael, P. (1989). Agriculture and the state system: The rise and decline of national agricultures, 1870 to the present. *Sociologia Ruralis*, *29*(2), 93-117.

Friedmann, H. (1993). The political economy of food: a global crisis. *New Left Review*, (197), 29-57.

Friedmann, H. (2005). Feeding the empire: The pathologies of globalized agriculture. *Socialist Register*, *41*(41), 124-143.

Friedmann, H. (2007). Scaling up: Bringing public institutions and food service corporations into the project for a local, sustainable food system in Ontario. *Agriculture and Human Values, 24*(3), 389-398.

Gamboa, P., (2016, November 20). Enseñan a crear huerto urbano. *Norte de Ciudad Juárez.*

Goldfrank, B., & Schrank, A. (2009). Municipal neoliberalism and municipal socialism: urban political economy in Latin America. *International Journal of Urban and Regional Research, 33*(2), 443-462.

Grey, S., & Patel, R. (2015). Food sovereignty as decolonization: some contributions from Indigenous movements to food system and development politics. *Agriculture and Human Values*, *32*(3), 431-444.

Grineski, S. E., Collins, T. W., McDonald, Y. J., Aldouri, R., Aboargob, F., Eldeb, A., Romo Aguilar, M. L., & Velázquez-Angulo, G. (2015). Double exposure and the climate gap: changing demographics and extreme heat in Ciudad Juárez, Mexico. *Local environment, 20*(2), 180-201.

Hilger, M. T. (1980). Decision-making in a public marketing enterprise: CONASUPO in Mexico. *Journal of Interamerican Studies and world affairs, 22*(4), 471-494.

Holt-Giménez, E. (2011). Food security, food justice, or food sovereignty. *Cultivating Food Justice: Race, Class, and Sustainability*, 309-330.

Heyman, J. (2007). Environmental Issues at the U.S.-Mexico Border and the Unequal Territorialization of Value. In A. Hornborg, J. R. McNeill, J. Martinez-Alier (Eds.). *Rethinking Environmental History: World-System History and Global Environmental Change*, (pp. 327-344) Landham, MD: AltaMire Press.

Guthman, J. (2007). The Polanyian way? Voluntary food labels as neoliberal governance. *Antipode*, *39*(3), 456-478.

Hernández, C., Ochoa, S., & Yaschine, I. (2015). El programa de comedores comunitarios: análisis de su diseño e instrumentación. *Documento de trabajo del Programa Universitario de Estudios del Desarrollo.* Mexico City, MX: UNAM.

Hicks, W. W. (1967). Agricultural Development in Northern Mexico, 1940-1960. *Land Economics*, *43*(4), 393-402.

Jacobson, N., Oliver, V., & Koch, A. (2009). An urban geography of dignity. *Health & Place, 15*(3), 725-731.

Johnston, J., Biro, A., & MacKendrick, N. (2009). Lost in the supermarket: the corporate-organic foodscape and the struggle for food democracy. *Antipode, 41*(3), 509-532.

Kosack, E. (2020). Guest Worker Programs and Human Capital Investment: The Bracero Program in Mexico, 1942-1964. *Journal of Human Resources,* 0616-8015R2.

Lewis, J. (2002). Agrarian change and privatization of ejido land in northern Mexico. *Journal of Agrarian Change, 2*(3), 401-419.

Levy, S., & Van Wijnbergen, S. (1994). Labor markets, migration and welfare Agriculture
in the North-American Free Trade Agreement. *Journal of Development Economics, 43(2)*, 263-278.

Liverman, D. M. (1999). Vulnerability and adaptation to drought in Mexico. *Natural Resources Journal, 39(1)*, 99-116.

Liverman, D. M., Varady, R. G., Chávez, O., & Sánchez, R. (1999). Environmental issues along the United States-Mexico border: Drivers of change and responses of citizens and institutions. *Annual Review of Energy and the Environment, 24(*1), 607-643.

Liverman, D. M., & Vilas, S. (2006). Neoliberalism and the environment in Latin America. *Annual Review of Environment and Resources, 31*, 327-363.

Loboguerrero, A. M., Campbell, B. M., Cooper, P. J., Hansen, J. W., Rosenstock, T., & Wollenberg, E. (2019). Food and earth systems: priorities for climate change adaptation and mitigation for agriculture and food systems. Sustainability, 11(5), 1372.

Lustig, N., & Del Campo, A. M. (1985). Descripción del funcionamiento del sistema CONASUPO. *Investigación económica, 44*(173), 215-243.

Manon M., Ramos A., Young C., Lang B., Whigham L., Redelfs A. and Gallinar J.(2017).
Food for Every Child: Access and Demand for Healthy Food in the Paso del Norte Region. Philadelphia, PA: The Food Trust.

Marsden, T. (2018). Theorising food quality: some key issues in understanding its competitive production and regulation. In Harvey, M., McMeekin, A., Warde, A. (Eds.). *Qualities of food.* (pp.129-155) Manchester, UK: Manchester University Press.

Marsden, T., & Sonnino, R. (2012). Human health and wellbeing and the sustainability of urban–regional food systems. *Current Opinion in Environmental Sustainability*, *4*(4), 427-430.

Martínez, D. C. (2017). Community dining program of the national crusade against hunger. The issue of citizen participation. *Política, Globalidad y Ciudadanía, 3*(5), 34-43.

Martínez Prado, H., (2020, February 15). Ciudad Juárez: 27 años de feminicidio. *El Diario*. Retrieved from: https://diario.mx/Juárez/ciudad-Juárez-27-anos-de-feminicidio-20200214-1628117.html

McCann, E., & Ward, K. (2012). Assembling urbanism: following policies and 'studying through' the sites and situations of policy making. *Environment and Planning A, 44*(1), 42-51.

McClintock, N. (2010). Why farm the city? Theorizing urban agriculture through a lens of metabolic rift. Cambridge journal of regions, *Economy and Society, 3*(2), 191-207.

McClintock, N. (2014). Radical, reformist, and garden-variety neoliberal: coming to

terms with urban agriculture's contradictions. *Local Environment, 19*(2), 147-171.

McMichael, P. (2005). Global development and the corporate food regime. In *New directions in the sociology of global development* (pp. 265-299). Bingley, UK: Emerald Group Publishing Limited.

McMichael, P. (2012). The land grab and corporate food regime restructuring. *The Journal of Peasant Studies*, 29(3–4), 681–701.

McMichael, P. (2013). *Food regimes and agrarian questions.* Black Point, NS: Fernwood
Publishing.

Medel-Ramírez, C., & Medel-López, H. (2018). Complementarity Analysis of the Priority Areas Development Program and the Priority Attention Areas Program in the National Crusade Against Hunger Program in Indigenous Municipalities in the State of Veracruz Mexico. *Center for Studies on Public Finance and Combat Poverty Working Paper*, (9). Retrieved from https://philarchive.org/archive/MEDCAO

Medel-Ramírez, C., Ramirez, M. M. O., & López, C. C. (2016). Multidimensional Poverty, Indigenous Population and Social Exclusion in Mexico: A Look at the National Cross Country Program against Hunger (Sinhambre 2013). In Bouza, C., Rodriguez, D., & Felix, J. (Eds.). *Pobreza, desigualdad y violencia en América Latina. Un enfoque metodológico mixto* (pp. 305-322). Salamanca, SP: Universitaria Empresarial de Salamanca.

Mendoza León, L. (2015). Implementación y Efectos Socio-económicos del Programa 'PROCAMPO-PROAGRO productivo'.Unpublished thesis. Universidad Autónoma Del Estado De México.

Moore, J. W. (2010). Cheap food & bad money: Food, frontiers, and financialization in the rise and demise of neoliberalism. *Review (Fernand Braudel Center)*, 225-261.

Moreno-Brid, J. C., Carpizo, J. E. P., & Bosch, J. R. (2009). Economic development and social policies in Mexico. *Economy and Society*, 38(1), 154-176.

Morgan, K. (2008). Greening the realm: sustainable food chains and the public plate.

Regional Studies, 42(9), 1237-1250.

Murdoch, J., Marsden, T., & Banks, J. (2000). Quality, nature, and embeddedness: Some theoretical considerations in the context of the food sector. *Economic Geography, 76*(2), 107-125.

Ocaranza, C., (2019, February 25) Desaparecen los 5,542 Comedores Comunitarios de Sedesol. *Rin de Cuentas*. Retrieved from https://www.rindecuentas.org/reportajes/2019/02/25/desaparecen-los-5542-comedores-comunitarios-de-sedesol/

Patel, R. (2012). Stuffed and starved: The hidden battle for the world food system. Brooklyn, NY: Melville House.

Peck, J., & Theodore, N. (2010). Mobilizing policy: Models, methods, and mutations. *Geoforum*, *41*(2), 169-174.

Pechlaner, G., & Otero, G. (2008). The third food regime: neoliberal globalism and agricultural biotechnology in North America. *Sociologia ruralis, 48*(4), 351-371.

Perez Espino, J., (2016, October 20). Impugna Greenpeace a titular de Desarrollo Rural; lo vincula a transgénicos. *El Diario de Juárez*. Retrieved from https://diario.mx/Estado/2016-10-20_3d4046d6/impugna-greenpeace-a-titular-de-desarrollo-rural-lo-vincula-a-transgenicos/

Plan Estratégico de Juárez, A.C., (2019). Economía Informe 2019. *Ciudad Juárez, México: Plan Estratégico de Juárez, A.C*.

Pothukuchi, K., & Kaufman, J. L. (2000). The food system: A stranger to the planning field. *Journal of the American Planning Association*, *66*(2), 113-124.

Pothukuchi, K. (2005). Attracting supermarkets to inner-city neighborhoods: economic development outside the box. *Economic Development Quarterly*, *19*(3), 232-244.

Preibisch, K. L., Herrejón, G. R., & Wiggins, S. L. (2002). Defending food security in a free-market economy: the gendered dimensions of restructuring in rural Mexico. *Human Organization, 61*(1), 68-79.

Pritchard, B. (2009). The long hangover from the second food regime: a world-historical

interpretation of the collapse of the WTO Doha Round. Agriculture and Human Values, 26(4), 297.

Raynolds, L. T. (2000). Re-embedding global agriculture: The international organic and fair trade movements. Agriculture and human values, 17(3), 297-309.

Regional Stakeholders Committee. (2009). The Paso del Norte region, US-Mexico: Self-evaluation report. OECD Reviews of Higher Education in Regional and City Development, IMHE. Retrieved from http://www.iecd.org/edu/imhe/regionaldevelopment

Robinson, A. G., & Bookbinder, J. H. (2007). NAFTA supply chains: facilities location and logistics. *International Transactions in Operational Research*, 14(2), 179-199.

Rochin, R. I. (1985). Mexico's Agriculture in Crisis: A Study of Its Northern States. *Mexican Studies/Estudios Mexicanos*, *1*(2), 255-275.

Roff, R. J. (2007). Shopping for change? Neoliberalizing activism and the limits to eating non-GMO. *Agriculture and human values*, *24*(4), 511-522.

Rosenberg, N. A.; Cohen, N. (2018). Let them eat kale: The misplaced narrative of food access. *Fordham Urban Law Journal*, 45(4), 1091-1120.

Rosset, P. (2008). Food sovereignty and the contemporary food crisis. Development, 51(4), 460-463.

Sánchez-Reaza, J., & Rodríguez-Pose, A. (2002). The impact of trade liberalization on regional disparities in Mexico. *Growth and change, 33*(1), 72-90.

Schiff, R. (2008). The role of food policy councils in developing sustainable food systems. *Journal of Hunger & Environmental Nutrition, 3(*2-3), 206-228.

Schneider, M., & McMichael, P. (2010). Deepening, and repairing, the metabolic rift. The Journal of peasant studies, 37(3), 461-484.

Scott, J. (2009) The Incidence of Agricultural Subsidies in Mexico. *Centro de*

Investigación y Docencia Económicas. Retrieved from http://cide.edu/repec/economia/pdf/DTE473.pdf

Scrinis, G. (2007). From techno-corporate food to alternative agri-food movements. *Local-Global: Identity, Security, Community*, *4*(2007), 112-140.

Shamah-Levy, T., Mundo-Rosas, V., Flores-De la Vega, M. M., & Luiselli-Fernández, C. (2017). Food security governance in Mexico: How can it be improved?. *Global Food Security*, *14*, 73-78.

Spalding, R. (1985). Structural Barriers to Food Programming: An Analysis of the "Mexican Food System". *World Development*, *13*(12), 249-1262.

Staudt, K., (2010). Living and Working in A Global Manufacturing Border Uran Space: A Paradigm For the Future?. In Staudt, K., Fragoso, J., & Fuentes, C. M. (Eds.). *Cities and citizenship at the US-Mexico border: The Paso del Norte metropolitan region.* (pp. ix-xxi). New York, NY: Springer Publishing.

Strauss, A., & Corbin, J. (1994). Grounded theory methodology. *Handbook of qualitative research, 17*(1), 273-285.

Sundkvist, Å., Milestad, R., & Jansson, A. (2005). On the importance of tightening feedback loops for sustainable development of food systems. *Food policy*, *30*(2), 224-239.

Sussman, L., & Bassarab, K. (2017). Food policy council report 2016. Johns Hopkins University Center for a Livable Future. Retrieved from https://s30428.pcdn.co/wp-content/uploads/sites/2/2019/09/FPC-Report-2016_Final.pdf

Taylor, J. (1990). The Unfinished Revolution in Mexican Agriculture. *Economic Development and Cultural Change, 39*(1), 183-188.

Tickell, A., & Peck, J. A. (1992). Accumulation, regulation and the geographies of post-Fordism: missing links in regulationist research. *Progress in Human Geography*, *16*(2), 190-218.

Tubiello, F. N., Salvatore, M., Cóndor Golec, R. D., Ferrara, A., Rossi, S., Biancalani, R.,
Federici, S., Jacobs, H., & Flammini, A. (2014). Agriculture, forestry and other land use emissions by sources and removals by sinks. Statistics Division, Food and Agriculture Organization, Rome.

Via Campesina (2013, January 15). Food Sovereignty. Retrieved from https://viacampesina.org/en/food-sovereignty/

Von Braun, J. (2009). Addressing the food crisis: governance, market functioning, and investment in public goods. *Food Security*, *1*(1), 9-15.

Weis, A. J., & Weis, T. (2007). *The global food economy: The battle for the future of farming*. London, UK: Zed Books.

Winter, M. (2003). Geographies of food: agro-food geographies making reconnections. *Progress in Human geography, 27*(4), 505-513.

Wolf, E. R. (1999). Peasant wars of the twentieth century. Norman, OK: University of Oklahoma Press.

Wright, M. W. (2001). Feminine villains, masculine heroes, and the reproduction of Ciudad Juárez. *Social Text, 19(*4), 93-113.

Wright, M. W. (2004). From protests to politics: Sex work, women's worth, and ciudad Juárez modernity. *Annals of the Association of American Geographers, 94*(2), 369-386.

Wright, M. W. (2014). The Gender, Place and Culture Jan Monk distinguished annual lecture: gentrification, assassination and forgetting in Mexico: a feminist Marxist tale. *Gender, Place & Culture, 2*1(1), 1-16.

Zhang, C., Wohlhueter, R., & Zhang, H. (2016). Genetically modified foods: A critical review of their promise and problems. *Food Science and Human Wellness, 5*(3), 116-123.

Yunez–Naude, A. (2003). The dismantling of CONASUPO, a Mexican state trader in agriculture. *World Economy, 26*(1), 97-122.